UGANDA PROTECTORATE

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

For the year ended 31st December, 1950

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SECTION I.—GENERAL REVIEW

Weather

Over the Protectorate generally the spring rains broke during March and precipitation was normal during the early part of the season. Thereafter the rainfall was variable and conditions, especially in the northern half of the country, were unsatisfactory for normal crop growth. In many areas replanting of food crops was necessary and intermittent periods of unusually dry weather resulted in reduced crop yields.

Initially the autumn rains promised well but in the event they proved unreliable and the most noticeable feature was once again the extreme variability of the rainfall throughout the Protectorate. During the last two months of the year abnormally dry and hot weather was experienced and cotton and other crops were adversely affected.

In most areas the rainfall for the year was below average.

Native Agriculture

GENERAL

While the general policy of the Department continued to be directed towards obtaining an improvement in the traditional farming systems and also, where possible, towards introducing more modern methods, the first and fundamental aim was again to ensure the production of an adequate supply of food for both rural and urban population. It is necessary to place particular emphasis on this part of the work of the Department since it is impossible for an undernourished or underfed peasant community to work with that vigour which is necessary if a general advance in their farming economy, and an overall and gradual improvement in standards of living, are to be achieved. The second objective is to produce progressively increasing quantities of cash or economic crops in order to enable the standard of living of the farmers to be raised and, indirectly, to provide them with those social services for which there is an ever growing demand.

With a rapidly increasing population it will inevitably be necessary gradually to extend the acreage under both food and cash crops but at the Protectorate's present stage of agricultural development it is considered that an increase in the production of these crops, to meet the present overall requirements of the people, can be more economically and readily attained by increasing the yield per unit area than by merely extending the arable acreage. To this end, and in conjunction with the introduction and issue of improved varieties and strains of crops, the peasant farmer is being persuaded and encouraged to utilise his land to better advantage. In this respect the importance of adopting better yet simple crop and stock husbandry methods

is emphasised. The Uganda Credit and Savings Bank commenced operations during the year and it is hoped that this will be of considerable assistance to those progressive farmers who are at present unable to develop their holdings due to lack of capital.

BUGANDA

The lot of the African farmer improved during the year, mainly as a result of increases in the prices he received for the major cash crops, namely cotton and coffee. The prices paid for raw cotton were advanced from Shs. 30 to Shs. 33 per 100 lb. for the 1949/50 crop while *Robusta* coffee prices were increased from 25 cents to 40 cents per pound for dried cherry.

Although it was not possible to announce the final producer price for the 1950/51 cotton season until after planting had been completed, the acreage nevertheless remained at a satisfactory level over the Province as a whole. Due to unusually dry conditions during the early part of the planting season the crop was planted somewhat late, but despite this it is expected that during 1951 the yield of lint will amount to 140,000 bales compared with 161,320 bales during the previous season.

The increased price paid for *Robusta* coffee stimulated growers to pay greater attention to the cultivation and harvesting of this crop; there also followed an exceptionally high demand for coffee seedlings with a consequential increase in the acreage planted. The actual picking of the crop was not carried out with the same degree of care as that given in former years and as a result the general quality of the crop marketed was somewhat lower than normal. The main contributory cause for this was to some extent unavoidable because it was due firstly to the exceptionally heavy crop which made large demands upon the time of the pickers and secondly to the fact that there was an acute shortage of immigrant labour who have in the past been available for harvesting. Primary marketing, however, proceeded smoothly and it is anticipated that a record crop amounting to some 30,000 tons will eventually be secured. During the 1950 calendar year 26,263 tons of clean coffee were exported from the curing works.

Hitherto only fire-cured tobacco has been grown in Mubende District but during the year under review there was a slight change in policy in as much as approximately half the acreage was switched over to the production of air-cured leaf. The total purchases of air- and fire-cured tobacco were 304,928 lb. and 396,919 lb. respectively.

There was some decrease in the acreage planted to maize and although the crop promised to yield well the actual amounts offered for sale were disappointingly low and totalled 240,141 bags of which 107,100 bags were exported for consumption in the other East African territories.

Food supplies in all areas were plentiful throughout the year and indeed towards the end of the year the supply of green bananas coming forward from South Bugerere for the Kampala market was unprecedented. Progress in soil conservation was generally satisfactory and reached spectacular proportions in areas where work was carried out on a communal basis.

EASTERN PROVINCE

Good results were obtained from the campaigns directed towards the planting of famine reserve root crops, such as sweet potatoes and cassava, of which mention was made in the Annual Report for 1949. These together with the early onset of the spring rains not only enabled growers to pursue the planting of their food crops with vigour but also made food supplies generally secure. Satisfactory acreages of cereals, legumes and root crops were planted in all areas and it is pleasing to be able to record that the campaign for the early planting of food crops in those areas of Mbale District which have habitually suffered from food shortages, arising mainly from the inertia of the people, has met with considerable success and has resulted in the establishment of a valuable food reserve. The threat of an invasion of the desert locust added impetus to the autumn planting of root crops and by the end of the year the food position throughout the Province was secure.

Although in Teso a satisfactory acreage of cotton was planted early, elsewhere in the Province preoccupation with food crops coupled with a long spell of dry weather in June resulted in an unduly large acreage being planted late. A total of 671,420 acres were grown and it is expected that approximately 140,000 bales of lint will be produced.

Although groundnuts are grown mainly for food, the crop is assuming an increasingly important position as a cash crop. In 1950 a total of 185,000 acres was recorded as having been planted; this was 32,000 acres more than were grown in the previous year. The marketing of the crop was partially decontrolled and instead of producer prices being fixed, as was the policy hitherto, a basic free-on-rail price of Shs. 580 per ton of shelled nuts was determined and from this anchored price the prices to producers found their own level. The new method proved popular with both growers and buyers and an equivalent of 15,000 tons of shelled nuts were marketed.

In order to ensure that sufficient seed was available for planting, it has, in the past, been the policy of the Department to reserve several hundred tons of seed from the previous crop for re-sale to growers. This system was, after adequate warning, discontinued in 1949 as it was felt that it was the duty of the growers themselves to keep their own seed supply. The result in that year was that many growers were short of seed and in consequence there was a reduction in the acreage planted, but the lesson had a salutary effect and in the 1950 planting season it was evident that the majority of growers had retained an adequate seed reserve from their 1949 harvest.

Though no specific encouragement was given to the growing of maize the recorded acreage showed a considerable increase in the Busoga and Mbale Districts where 102,000 bags and 15,000 bags respectively were marketed.

NORTHERN PROVINCE

Despite the unsatisfactory distribution of rainfall, the people made a determined effort to improve their food supply and acreages of the major food crops were above average; yields, however, were inevitably low on

account of the poor weather conditions. With the partial failure of the millet crop and with a threat of locust invasion from Kenya a successful root crop planting campaign was carried out, mainly from August until the end of October.

As regards economic crops, cotton remained of first importance and cultural methods were improved. Although a recorded total of 313,530 acres was planted the concensus of opinion was that more cotton was actually planted than in 1949 when the acreage figure was given as 363,743 acres. This adjustment arises from the fact that during the year there was a general tightening up in the accuracy of plot returns for all crops in an attempt to obtain a more true picture not only of the actual acreages planted but also of the general farming economy of the Province. At the end of October the bright prospects of a record cotton crop in all areas were ruined by the subsequent drought and while a record crop of 47,000 bales was produced during the 1949/50 season it is expected that only some 42,000 bales will become available from the 1950/51 crop.

An attempt to revive and stimulate interest in the production of simsim and groundnuts as cash crops was also nullified to a certain extent by the drought and it was, unfortunately, necessary to cancel the marketing arrangements which had already been made.

The tobacco acreage in the West Nile and Acholi Districts amounted to some 1,350 acres and thus showed but a small increase over the 1,295 acres planted during the previous year. In the former district the value of sunflower seed, firstly as a food and secondly as a cash crop was appreciated for the first time. In the West Nile District too, and mainly on account of increased coffee prices, some growers in the highland areas showed a revived interest in the coffee crop. However, in view of the past history of coffee in those areas the Department is giving no active encouragement to extending its cultivation but at the same time cultural advice and coffee seedlings will be made available to those people who are genuinely interested.

Soil conservation methods, mainly strip cropping, continued to improve in Acholi and Lango, but in Karamoja and West Nile Districts, where the practice has been more backward, progress was less satisfactory.

Western Province

Although the production of economic crops throughout the Province may be relatively small, nevertheless further progress was made in improved agricultural methods and more sound land utilisation.

The Kigezi resettlement scheme, with the voluntary emigration from the overpopulated areas of East Ndorwa and South Rukiga to an area above the Lake Edward escarpment in Ruzhumbura and Kinkizi, continued. By the end of 1949 some 15,000 people had moved permanently and during 1950 a further 1,546 moved into the area. Perhaps the most important recent development regarding the general scheme is that agreement has now been reached between the Ankole and Kigezi authorities on the extension of organised resettlement from the overpopulated areas in Kigezi to Eastern Igara in Ankole District.

Despite the low and erratic rainfall in most areas the local food supplies were more plentiful than during the past few years.

In Toro and Bunyoro Districts the acreage planted to cotton showed a marked increase and it is expected that record crops will be obtained from both districts. There was an increase in the fire-cured tobacco acreage in Bunyoro and the quantity of leaf marketed was 1,928,010 lb. compared with 1,582,932 lb. in the previous season; producer prices for the crop were increased from 45 cents per pound for Grade I leaf and 35 cents per pound for Grade II to 52 cents and 38 cents respectively. In Kigezi there was, unfortunately, a drop in the production of both nicotine tobacco and flax, but the acreage under sunflowers and groundnuts was extended and, owing to the substantial increase in price, there was a revival of interest in coffee cultivation in the northern part of the district.

During the year a land development scheme was inaugurated in the Kibanda county of Bunyoro. This scheme which will ultimately provide for the settlement of African farmers on the developed areas will be operated by a public company (the Bunyoro Agricultural Company) formed for the purpose, the shareholders of which are the Bunyoro African Local Government, the Protectorate Government and two commercial firms having intimate business connections with Uganda.

Non-Native Agriculture

Coffee

During the year ended the 30th June, 1950, the crop amounted to 3,060 tons valued at £616,000. Under the contract with the United Kingdom Ministry of Food 1,781 tons were shipped to the United Kingdom, the balance of the crop being sold on the free market through the Mombasa auctions. The crop was handled by the Non-Native Coffee Marketing Board, established by statute. A delegation representing East African coffee interests, including those of the Board, negotiated successfully with the Ministry of Food for an upward revision of the contract prices, the new prices, which represented approximately a one hundred per cent. increase, were made retrospective to the 1st July, 1949. Prices on the free market remained at high levels throughout the year.

Tea

During the year tea planting licences were issued for a further 1,400 acres thus bringing the total licensed acreage to 20,163 acres as at the 31st December, 1950. Locally produced tea seed was in more plentiful supply than in previous years and, as a consequence, the establishment of nursery beds and the preparation of new land in readiness for planting proceeded. Some 250 acres were planted during the year which, added to previous plantings, brought the total area planted in the Protectorate to 6,400 acres.

Owing to favourable weather conditions during the latter part of 1949 and the early months of 1950, tea bushes in the established gardens grew well and pluckings were heavier than usual during the first six months of the year. This, together with new gardens coming into bearing, resulted in the production of a record crop of 4,142,584 pounds of made tea.

In March the new Tea Ordinance was enacted under the provisions of which the Uganda Tea Board was established. This Board whose membership, in addition to Government representation, provides for both producing and consuming interests, not only deals with the development of the industry and the allocation of made tea quotas for export and internal consumption, but also works in close liaison with other East African tea producing territories through the medium of the East African Central Tea Committee. During the year the quantity of tea exported from the Protectorate amounted to 1,953,283 pounds while allocations to the local market totalled 1,696,556 pounds.

Sugar

While a few small estates continued to produce jaggery, the production of "plantation white" sugar was again confined to the two sugar estates at Kakira and Lugazi. During the year the growth of cane recovered considerably from the set-back occasioned in 1949 by adverse weather conditions and sugar production amounted to 54,622 tons compared with 46,108 tons in the previous year. Of this total 25,582 tons were exported to other East African territories and 28,698 tons were allocated to the Uganda market.

Sisal

The only sisal estate in Uganda is that at Masindi Port where cutting and scutching continued throughout the year. Some 1,413 tons of fibre were produced compared with 964 tons in 1949.

Miscellaneous Crops

The production of pyrethrum on Karengere Estate, near Kabale, continued during the year and 32 tons of dried flowers were exported.

The sharp rise in rubber prices was reflected in a revival of interest in this commodity and tapping of both plantation and wild rubber was recommenced.

There was also during the year an increased demand for vanilla which benefited the few farmers who had previously established small acreages of this crop. Prices offered for first grade vanilla were as high as Shs. 60 per pound.

Agricultural Industries

Ginneries

The number of registered ginneries in the Protectorate remained at 193 of which 155 were in operation during the 1950 ginning season.

The Ngogwe ginnery owned by a non-African firm was purchased by the Buganda Government at the end of 1949 and was operated during 1950 by the Uganda Growers' Co-operative Union on lease from that Government. The actual management of the ginnery was in the hands of an Asian manager who was a paid employee of the Union. To meet the further desire of a section of the African community to participate directly in the ginning industry, arrangements were concluded, towards the end of the year, to lease a second non-African ginnery situated at Kawempe near Kampala and this will be

sub-leased to the Co-operative Union to deal with members' cotton during the 1950/51 season.

During the year numerous meetings and discussions took place with representatives of the Uganda Cotton Association in an endeavour to reach agreement and to formulate proposals for the reorganisation of the cotton ginning industry. In this the Department is indebted to Mr. Griffin Smith, M.B.E., who spent some months in the Protectorate on secondment from the East African Office, London, to assist with the work. The two main considerations which formed the background of the negotiations were, firstly, the need to modernise and to re-equip the factories to effect economies in working and to improve the quality and regularity of the lint produced and, secondly, to afford in increasing measure in the years to come opportunities for Africans to participate directly in the ginning industry through the acquisition by African co-operative unions of a number of ginneries, such number to be related to the growth of the co-operative movement. In September a full report was submitted to Government which was still under discussion with the Secretary of State for the Colonies when the year closed.

It is interesting and of importance to record that for the first year in the history of Uganda cotton, arrangements were made in September for the sale overseas of the 1950/51 crop to be on the basis of physical standards and not on description. The initiative in this matter was taken by the Uganda Cotton Association who drew up a quality incentive scheme which was approved by the Lint Marketing Board who engaged three experts cotton classers from Liverpool and provided suitable accommodation to implement the scheme. Under the new arrangements five physical grade lint standards were prepared for each cotton zone representing fair average quality, three premium and one discount grade. It was agreed that the price which ginners would receive would be based on the standard F.A.Q. grade and that ginners would receive premia for lint produced above the standard while being required to pay a penalty for sub-standard lint. The bulk sales of the 1950/51 crop to the United Kingdom Raw Cotton Commission and to the Government of India was concluded on the same basis and the necessary arrangements were made for the classification in Uganda of all bales produced by each ginnery and for appraisal and, where necessary, for arbitration in the two countries of destination. The scheme has entailed a great deal of work by the executives of both the Uganda Cotton Association and the Lint Marketing Board but if, as is hoped, the arrangement becomes a permanent feature of the processing and marketing overseas of the Uganda cotton crop, there should be a marked advance in the quality and regularity of shipments.

Coffee Curing Works

Seven curing works licensed under the Coffee Grading Ordinance operated for the cleaning and grading of the African-produced coffee crops, excluding the Bugishu *Arabica* crop which is handled by the Bugishu Coffee Scheme. As with cotton, some sections of African growers wish to participate directly in this processing industry and during the year ways and means of affording facilities for Africans to do so were under examination.

It should be pointed out, however, that, again as with cotton, costs and profit margins to coffee processors are under strict State control and that so long as producer prices are fixed and overseas sales are conducted by statutory boards or controls, profits being funded for price assistance purposes in future years, there is no opportunity for private trading or speculation by commercial or processing interests. Thus the benefits which Africans can expect to receive from entering into industries such as coffee processing will be limited to fixed margins of profit which margins will not be realised unless they are able to operate as efficiently and as economically as the existing factories.

Oil Mills and Refineries

Although a limitation on the erection and installation of oil mills and oil milling machinery continued to be imposed due to the fact that the crushing capacity of existing mills is considerably in excess of the quantities of oil-seeds which can be allocated to them, two firms in the Protectorate embarked on the erection of oil refining and deodorising plants, one of which commenced to operate during the year. Allocations of groundnuts were made to the mills from the comparatively small off-season crop marketed during the first half of the year but, with the removal of the control over local marketing in July, oil millers were free to purchase directly from growers their crushing requirements and some 15,000 tons were so purchased. Distribution and price control of cotton seed was maintained throughout the year.

Additional to the 15,000 tons of groundnuts mentioned above, some 614 tons of groundnuts and 52,783 tons of cotton seed were allocated by the Oilseeds Control to the twenty-seven established mills; the two latter tonnages produced 55,260 gallons and 1,266,792 gallons of oil respectively. During the year exports of groundnut and cotton seed oils to other East Africa High Commission territories amounted to 1,748,548 gallons of which 1,606,600 gallons were required by Kenya. The production of cattle cake totalled 19,702 tons from the crushing of cotton seed and 4,117 tons from groundnuts of which 9,268 tons were sold to Kenya for stockfeed, and apart from a relatively small tonnage retained for local manuring and feeding purposes the balance was exported to the United Kingdom Ministry of Food.

General

Licences issued during 1950 by the Commissioner of Customs and Excise, East Africa, under the Excise Duties Ordinance, 1937, for the manufacture in Uganda of the undermentioned articles were as follows:—

Article	*Number of Licences issued*
Tobacco, cigarettes and cigars ...	2
Cigars	1
Sugar	2
Tea	13

Soil Conservation

The problem of the maintenance of soil fertility continued to receive the attention of all departments whose activities are in any way concerned with the natural resources of the Protectorate and the welfare of its farmers.

Apart from Kigezi and Bugishu Districts and areas in the vicinity of the larger towns it is fortunate that, at this stage of the agricultural development of the country, there is no undue pressure of either human or stock population on the land. While it may be argued that such a position in itself will make it more easy to guard against the misuse of land it is equally true to say that, unless adequate care is taken of the soil, a progressive reduction in its fertility status is bound to take place. Accordingly the main aim of the executive staff of the Department has again been to impress upon cultivators the necessity for taking such steps as are necessary to maintain and improve the fertility of their land, no matter whether it be under crops or grass, and for protecting their fields, roads, paths and homestead plots against soil erosion. In respect of land under cultivation, considerable progress in furthering the use across the slope of either narrow uncultivated grass strips or bunds planted to *Paspalum notatum*, has been made in all areas with the exception of West Nile and Karamoja Districts where, unfortunately, the people have shown little interest in this work. The extension of the recognised anti-soil erosion measures in Kigezi and Mbale Districts has proceeded well and it will be sufficient to record that the Deputy Agricultural Adviser to the Secretary of State for the Colonies, after his visit to Kigezi District in November stated, "I consider (it) to be the most spectacular work on soil conservation anywhere in the British Empire".

Overgrazing has continued to be a problem in certain parts of Karamoja, Lango and Busoga Districts, but there is an increased tendency on the part of African Local Governments to appreciate the necessity for closing areas to grazing and activities to this end have increased. Further work has also been carried out on the rehabilitation of eroding tracks leading to cattle watering places and in the re-alignment of cattle tracks so as to reduce the danger of erosion to a minimum. The provision of suitable numbers of water supply points is, of course, essential to the development of any area, and to this end the Geological Department has been responsible for the construction of further numbers of dams and the sinking and equipping of additional bore-holes.

Apart from the field work carried out by the extension staff, the necessity for adopting measures to safeguard land against erosion is impressed upon all students, pupils and others who attend agricultural education and demonstration courses at the various stations of the Department.

Gombolola or County competitions were again organised in many districts; these were entered into by the people with an increasing spirit of healthy rivalry and are extensively becoming annual events of considerable importance. Not only do these competitions encourage the actual practice of soil conservation but they also have far-reaching effects from a mass education point of view.

Soils and Manures

It will be evident from the preceding paragraphs that the first step towards the maintenance of soil fertility has been primarily directed to

retaining the surface soil, but in addition to this the general policy of the Department regarding the maintenance and improvement of soil fertility has two main aims:—

(*a*) to encourage the integration of livestock into the farming system in such a way as to make crops and stock complementary to one another rather than to regard them as separate or distinct entities.

(*b*) to encourage rotations which provide for a suitable period of cultivation followed by an adequate period of resting under grass.

The making of compost and the application of this and also of cattle manure to the arable land continues to be stressed. That these products increase crop yields when used properly is widely known, yet it is still all too common to find accumulations of this type of material lying idle near homesteads. This unfortunate position arises from the fact that the majority of cultivators have not the facilities for transporting large quantities of compost and manure to their fields; the provision of such facilities is a problem which has yet to be solved.

It is now generally accepted that in many areas a rotation which combines a period of three years resting with a period of three years cultivation will maintain soil fertility at a high level provided the land is of reasonable quality in the first instance. In the thickly populated regions it is seldom possible to allow the land to be rested for three years and there is thus arising a potential danger of soil exhaustion. Movement of population is probably the only practicable solution to this problem and in the previously overpopulated areas of Kigezi District in which pressure of cultivation has been relieved by resettlement of a proportion of the population in other areas, a noticeable feature during the year has been an increase in the amount of resting land. For instance, in parts of Buhara, where formerly there was very little resting land, it was possible to reorganise much of the cultivation on to a true strip cropping system with alternate cultivated and rested strips. Again, a comparison of the results of surveys carried out in the previously overpopulated areas of Kitumba and Kyanamira of Kigezi District shows that the position has improved and that there is now a greater proportion of resting land:—

	Percentage of Total Land	
	January, 1945	September, 1950
	%	%
Cultivated ...	54·9	27·4
Resting Land ...	19·6	48·4

In addition to the work being carried out at the main Experiment Stations in regard to organic manures and agronomy in relation to soil fertility, inorganic fertiliser trials were again laid down in several localities to investigate problems which have arisen from earlier experiments.

Work in connection with "Lunyu" soil, which is a highly acid soil, poor in nutrients, has been continued and during the year a trial was laid down to ascertain whether rock phosphate or soda phosphate would give

responses on the same scale as had been obtained by double superphosphate in 1949. In addition to those phosphatic fertilisers a nitrogenous fertiliser was also included in the trial and a grass mulch was added as a split plot treatment to discover whether the improved moisture conditions so obtained would lead to improved responses to the applications of phosphates. Unfortunately the season was abnormally wet, the yields of the indicator crop, *Eleusine coracana*, were poor and the responses to the fertilisers disappointing. Both the nitrate and mulch treatment were slightly depressing in effect while the responses to the applications of phosphates were not large enough to be considered as economic.

Trials designed to test the effect of fertilisers on *Chloris gayana* (Rhodes grass) were also carried out during the year. At the Livestock Experiment Station of the Veterinary Department at Entebbe the trial showed that although an application of limestone was effective in improving the germination and stand of *Chloris*, its effect did not persist beyond the first cut of grass. At Serere also some interesting results were obtained: a good stand of *Chloris* in the first cut gave a high response to a phosphate dressing (260 per cent compared with the control at 100 per cent), with lesser significant responses to nitrogen (148 per cent) and dung (133 per cent). However in the second cut where the mean yield had dropped to 1½ tons of green matter per acre as opposed to 3 tons per acre in the first cut, the phosphate treatment actually gave lower yields than the control whereas dung treatment gave a response of 125 per cent. The effect of the dung is interesting in that it adds further confirmation to previous findings at Serere that small dressings give responses in crop yields up to two or perhaps three years after application.

The most important line of basic research being carried out at the moment concerns the large fluctuations in the natural nitrate content of the soil and until it is possible to obtain a clear picture of the factors which influence these variations, trials with nitrogenous fertilisers lose much of their true value.

Animal Husbandry

The work carried out under this heading covers three broad aspects:

(*a*) The systematic improvement of livestock and the investigation of problems connected with the management of animals.

(*b*) The introduction of improved animal husbandry methods into the existing livestock economy of the peasant farmer.

(*c*) The adoption of a farming system which combines both crop and animal husbandry to the mutual advantage of both.

In implementing this policy the Department has continued to work in close collaboration with the Veterinary Department, which has afforded the fullest co-operation, while advice and assistance have also been given to both Departments by the Husbandry Committee.

Problems relating to general livestock improvement continue to be investigated at all main agricultural stations and perhaps more so at Serere than elsewhere. The policy of line breeding in cattle was adhered to and

this may be briefly described as selection for a dual purpose animal, that is to say, for the combined qualities of milk, stamina and beef type conformation, by using bulls by sires which have been progeny tested for milk and liveweight gains. While conformation and beef characteristics are given due consideration the accent at the moment is placed on milk production, as a good mature animal can only be produced from a healthy calf which has suffered no undue setbacks. The reason for adopting this policy arises from the fact that in most areas many cows do not yield sufficient milk to feed their calves adequately let alone provide milk for human consumption.

At Serere the system of pail feeding calves from the milking herd is now regularly adopted although it is clear from the performance of these calves, as measured in terms of liveweight gains, that there is still room for improvement. On the other hand the calves in the range herd suckle their mothers and although these cows are generally speaking the low milk yielders, their calves gain at a more rapid rate than those which are bucket fed. In order to ascertain the quantity of milk which a suckling calf would consume from birth to weaning, a series of test weighings was commenced, and whilst results are not yet complete, indications are that the average total amount of milk suckled is approximately 80 gallons per calf.

At Ngetta the cattle continued to be run on the dairy-range system, whereby the calves run with the cows during the day but are separated from them during the night; in the morning the cows are milked and the yields recorded. This system, while somewhat imperfect from an accurate milk recording point of view, has much to commend it from the aspect of practical application for not only does it overcome the time spent on pail feeding and the dangers likely to arise therefrom but also gives a fair indication of the milking qualities of the individual cows.

The mean yield per cow per day at Serere in 1950 was 8·2 lb. or an increase of one pound over the equivalent figure for the previous year. The best individual yield was given by one of the foundation cows—Akwazo II—who produced 350 gallons in addition to suckling her calf. Of those animals which are completely milked-out, the highest yield was from a young cow which produced 324 gallons in 305 days in her first lactation.

The introduction of improved animal husbandry methods into the existing livestock economy of the African farmer is effected firstly through the Livestock Improvement Area schemes and secondly, by the general extension work of the District and Provincial staff. Likewise these channels are used for encouraging the farmer to adopt farming systems in which animal husbandry, crop husbandry and pasture management are integrated.

Pasture Work

In the previous sections of this report reference has been made to the importance of resting cultivated land under grass for a number of years in order that the soil may regain its fertility and character. Since much of the land in Uganda is at present available to stock owners as bush or rough grazing there is not that limitation which would restrict a farmer to making

the utmost use of his resting land for depasturing stock. But with the rapidly increasing population the time will ultimately come when it will be most necessary for farmers carefully to utilise land under rest. Accordingly pasture work has mainly been directed towards the production and management of suitable grasses for temporary leys and to comparing their productivity and also their effect on the soil with naturally regenerated pasture.

Throughout the Protectorate generally, experimental work continues to show that *Chloris gayana* (Serere strain) is at the moment the most suitable grass for these leys while in some areas *Melinis minutiflora* (Molasses grass) and *Bothriochloa pertusa* are also promising. It is, however, most unlikely that full benefits will be obtained from a ley which consists of one grass only and it is probable that a mixture of grasses will prove more suitable. Indeed the surprisingly good results obtained from naturally regenerated pasture during the second and third years of the resting period indicate that a mixture of grasses may be preferable to a pure stand of any one grass.

Turning to the management of permanent pastures, a trial has been in progress at Serere since 1947 to compare the effects of rotational as opposed to deferred grazing on this type of pasture. Preliminary observations have shown that both systems have brought about a marked improvement, but with a long-term trial of this nature, where the effect of the treatments is likely to become apparent in vegetational changes, it will be some time before the results can be known, since slight changes are not easy to evaluate.

In some areas of the Protectorate, notably the drier areas, a problem of major importance is the encroachment of bush and thorn trees (*Acacia spp.*) into the natural grazing thereby sterilising increasingly large areas for depasturing stock. Experiments designed to investigate ways and means not only of arresting the spread of this bush but also of eradicating it in areas now useless for grazing have been commenced in Karamoja, Teso and Lango Districts. Here again it is believed that the most economical form of control will be attained by judicious use of fire as an implement.

Irrigation

There are at present no large irrigation schemes or projects in the Protectorate and in all arable areas crops are grown on rainfall; but the flood water irrigation scheme in Karamoja, to which reference was made in the Annual Report for 1949, has continued to progress, albeit slowly. During the year some sixteen acres were flood irrigated and planted at Ngiminito, while three acres of the Nadunget scheme, which was commenced in 1949, were cropped for the first time. Sorghum was the main crop planted at Ngiminito and this averaged 1,200 lb. of threshed grain per acre as compared with 324 lb. per acre in non-flooded areas. Yields of groundnuts were also comparatively high and averaged 1,830 lb. of unshelled nuts per acre.

At the inception of the general scheme in 1948 there was a great deal of apathy and not a little opposition on the part of the Karamojong. However, in 1950 they were impressed by the fecundity of the flood irrigated land to

such an extent that they are now eager to participate in the scheme and moreover, are prepared to pay for the use of the prepared land at a rate of one-fifth of all crops harvested. The siting and construction of the bunded areas and the water deflectors is specialised work and for some years to come it cannot be expected that the local people will be able to do this without expert assistance. It is thus the intention that the services of one of the original party of four Arabs from Aden be retained and that the Department will continue to be responsible for further constructional extensions to the scheme, at any rate for the next few years. The developed areas, as and when they become available, will, it is hoped, be taken over ultimately by the Karamoja African Local Government which would be responsible for maintenance work and which would charge tenant farmers an agreed rate in kind.

Normal river water irrigation under the control of the Department was continued on a small thirteen acre farm at Mamalu, Karamoja, as a means of demonstrating the possibilities and benefits to the local people. Various crops such as cassava, sweet potatoes, vegetables, yams, bananas, plantains, water melons and rice have been tried. The most promising to date has been Senna rice which yielded at the rate of 2,099 lb. of paddy per acre and sales from this crop alone made the farm self-supporting.

Agricultural Education

Serere

A total of some 750 persons attended courses held at the Serere Education Centre during the year and a large number of parties, including cultivators and school children, paid day visits to the station. The courses for Chiefs and cultivators, in groups of approximately twenty each, proved extremely popular and some of the candidates brought their wives who took a great deal of active interest, both in the work and in the discussions. A course of twelve weeks' duration for twenty teachers drawn from the Eastern, Northern and Western Provinces proved very successful; all candidates worked hard and took much interest in the subjects of their lectures.

A total of 107 Prison Warders attended short fortnightly courses in which instruction was given in the correct layout and management of prison farms. The usual one-year apprentice course for future Assistant Agricultural Instructors opened with seventeen candidates in attendance but six failed to complete the course. A series of refresher courses of a fortnight's duration for Assistant Instructors was held towards the end of the year and was attended by 53 Instructors. A special course of a fortnight arranged at the request of the Administrative Officer-in-Charge of the Chiefs' Training Centre, Bukalasa, was held in December and was attended by twenty-three Chiefs. The lectures were of a very general nature and both the District Forest Officer and Veterinary Officer kindly assisted by addressing the Chiefs on the part played by them in district forest and veterinary activities. No first-year agricultural students enrolled at Makerere in 1950 and thus no Makerere students worked at Serere during the year.

Bukalasa

At Bukalasa two courses, comprising lectures and farm talks, were held for forty-two chiefs from the Chiefs' Training Centre. A party of twenty-four farmers from Buruli County attended the Cultivators' Course which embraced visits to places of interest such as Kawanda, Ngogwe and Sayi mutalla. Two courses were held for schoolmasters: the first was not well attended, while the second had unfortunately to be disbanded after a week owing to an outbreak of measles. Fifteen students attended the Apprentices' Course and all passed the final examinations. The Makerere Students' Course held during March, April and May was attended by eight students.

Ngetta

In the Northern Province, agricultural classes were commenced during the year at Ngetta where a total of 317 people including chiefs, sub-chiefs, clan leaders, teachers and cultivators were given instruction during seventeen courses.

General

Additional to the regular courses of instruction given at the established agricultural education centres, short courses were given to chiefs, cultivators and teachers at several of the Department's district demonstration farms. For instance at the Budaka farm in Mbale District a total of sixty-seven chiefs attended three short courses, while a total of 145 chiefs, teachers and students from the Vernacular Teachers' Training Colleges attended two courses of nine days each at the Kachwekano Farm in Kigezi.

The type of agricultural education mentioned above is, for obvious reasons, mainly directed towards giving the leaders of the people a better understanding of improved methods of farming and also to explaining to them the aims and the work of the Department. But apart from this specific method of imparting knowledge on agricultural matters, every other possible opportunity is taken to stimulate the adoption of better farming practices and in this repect the district extension staff has continued to play a leading part in interpreting the Protectorate's agricultural policy directly to farmers.

Pests and Diseases

Towards the end of the year there was a possibility of an invasion of the desert locust from Kenya and accordingly scouting arrangements were instituted in the eastern districts. No swarms were, however, reported and the Protectorate has fortunately remained free from this pest.

The presence of swarms of the Kagera dwarf locust (*Faureia milanjica*) in Ankole District and in parts of Kigezi and Masaka Districts in the early months of the year caused some concern and plans were made for operating a hopper destruction campaign. Fortunately, however, the hopper bands from the numerous flying swarms did not develop to the extent anticipated and no campaign was necessary. The flying swarms caused comparatively little damage and by the end of the year the incidence of this pest had become considerably reduced.

Pasmo disease of flax caused by *Sphaerella linorum* was responsible for a considerable reduction in the flax crop and unless some control measure can be found the disease may well lead to the abandonment of the industry.

The Spiny Caterpillar (*Acraea acerata*) and the Tailed Caterpillar (*Herse convolvuli*) caused severe damage to sweet potatoes in localised areas but their incidence was not so great as in 1949.

While the American Boll Worm was more noticeable on cotton in the eastern and northern districts of the Protectorate, attacks of other cotton pests and diseases such as *Lygus* and Blackarm were variable.

In general, there were during the year, no pest or disease outbreaks of major importance.

Experiment Stations

Investigational work connected with both food and economic crops, livestock, pests and diseases and soil fertility continued to be undertaken at all stations of the Department, and a description of these together with the type of work undertaken at each will be found in the Annual Report for 1948.

At Bukalasa an area of approximately thirty acres was surveyed and divorced from the general activities of the remainder of the farm in order that it could be made into an independent unit to be developed and run by an African and his family. The unit has been planned and laid out by members of the staff and on lines which are in accordance with the Department's general policy for farm development and nothing will be undertaken in the way of farming, or in the construction of buildings, which a progressive African could not accomplish on his own initiative. The farmer, however, will not receive assistance, either financial or in kind, but he will be guided in the matter of policy. Thus it is hoped not only to give immediate practical effect to a system of farming being generally advocated but also to obtain some information on the actual economics of the system.

In Masaka District stumping and clearing of the new Management Farm at Kamenyamigo continued and by the end of the year sixty-seven acres had been cleared, of which forty-seven were planted with maize, sweet potatoes, cotton and *Chloris gayana*. In addition to thirty acres of annual crops rotated with a similar area under grass leys the farm will carry sixty acres of coffee and an equal area under bananas besides a dairy herd to produce milk for sale locally.

During 1950 the Department acquired the 200 acre Abi Estate near Arua in the West Nile District. In addition to providing an agricultural demonstration and education centre, the farm will also serve as a centre for investigating local agricultural problems. Development has already been commenced in the matter of opening land to cultivation and the erection of farm buildings.

Crop and Produce Storage

During the latter part of the year work was begun on the construction and erection of the grain conditioning and storage plant at Jinja. This plant,

which is electrically operated throughout, consists of four main sections:—

(*a*) the intake and pre-cleaning plant which has a maximum capacity of thirty tons of grain per hour. This provides for delivery either by road or rail, and the grain is conveyed mechanically to reception silos having a capacity of 3,000 tons.

(*b*) the drying and conditioning plant with a capacity of ten tons per hour. This section also incorporates the mechanical automatic weighing and bagging-off plant.

(*c*) the thirty-two steel tank silos having a total capacity of 12,000 tons. Mechanical conveyors are provided at the top and base of each silo so that not only can any one silo be filled and emptied as required but also the grain therein may, if necessary, be automatically reconditioned and re-stored.

(*d*) two combined sack cleaners and dust collectors for cleaning all bags emptied at the intake point and also a sack heat-treatment chamber for sterilising bags prior to being stored for re-use.

The plant is being erected mainly for the storage of food reserves required for urban populations and for labour in paid employment. In other words it is primarily for meeting the annual needs of the Protectorate and avoiding the necessity at any time of making re-importations from Kenya or from overseas. It is hoped that the plant will commence to operate in 1951.

In order to provide for either temporary or protracted storage of produce (mainly cotton and cotton-seed) at rail-head, ten go-downs, each seventy-two feet long by thirty-six feet wide, were erected on the railway siding at Tororo, while in the industrial area of Kampala twenty-four go-downs, each ninety-nine feet long by thirty-six feet wide, were also erected. In addition to these thirty-four go-downs, arrangements have been made for the erection of a further thirteen go-downs at nine stations and ports throughout the Protectorate.

Additional facilities for the primary marketing of crops have been provided to a considerable degree by the procurement from the United Kingdom of 467 pre-fabricated metal stores of varying sizes. The erection of these, at selected buying centres in all Provinces, was commenced during the year.

Development of Mechanical Cultivation

In many countries, the mechanisation of farm operations has resulted in a considerable increase in the production output per man over a wide range of farming systems and, while African peasant agriculture presents a background which at first sight is unfavourable for a setting of similar development, it is natural that ways and means of providing it with the advantages of mechanisation should be investigated. The economic use of tractors and their equipment, however, is in the first instance severely restricted by the patchwork layout of small plots and in addition there is frequently much cultivation on excessive slopes. Reasonably economic

working of mechanical implements can only be achieved by extensive re-orientation of cultivated lands in order to obtain larger cultivable units. This problem is not new, nor is it confined to Uganda and while it is only one of several problems which inhibit the development of mechanisation at the present time, its solution will go a long way towards clearing the way for a more extensive use of mechanical methods of cultivation. On the Busoga Farms and Departmental Experiment Farms the economic layout of land for this purpose presents comparatively little difficulty, but in the case of peasant holdings the problem presents many difficulties of a social and agronomic nature which are unlikely to be solved without a long period of experiment and investigation. For this purpose several mechanical cultivation units consisting of one or more tractors, and their ancillary equipment, have been established in suitably representative rural areas and are operated by the Department on peasant farms on a contract hire basis. The hire rates are so graded as to provide an incentive to individual or groups of farmers to group their cropping lands into larger areas and a contour strip layout is insisted upon. There is a considerable demand for the services provided by these units and while so far the larger individual farmers have been the principal users there are indications that the smaller farmers are also beginning to appreciate their advantages and the desired tendency towards community strip cropping is beginning to show itself, although in areas where a system of private ownership of land prevails there are many difficulties in the way of its achievement. In themselves, therefore, the operation of these tractor units is providing useful information on methods of land layout for economic mechanical cultivation and, in addition, they enable the purely mechanical problems of mechanisation under the varied conditions of peasant farming under African conditions to be studied intensively. Tractors and equipment of several types are being used and much useful information of mechanical requirements for varying types of land and field operations is being obtained.

An important feature of the scheme is the system of costings which is maintained and which is designed to obtain in due course reasonably accurate information of the costs of all operations under varying conditions and with the various types of machines under trial. This aspect of the scheme also enables the hire rates charged to be related fairly closely to actual economic costs, thus ensuring that users do not obtain a false impression of the cost of mechanical cultivation in the early stages of its development. Cost is an important factor and while land layouts suitable for mechanisation are more likely to be easily obtained in districts with tribal land ownership, these districts as it happens are in areas where crop value per acre are low and long dry seasons make the full utilisation of machinery difficult. The net return from mechanical farming in such areas tends to be low therefore and as comparatively cheap ox-draught and hand labour is also freely available it is doubtful if mechanisation will prove to be economic. For the time being prospects of mechanical development are more favourable in those areas which climatically permit higher standards of farming and a wider range of crops and in which large centres of urban population provide an outlet and a steady demand for food crops at remunerative prices.

An account of the initiation of certain development schemes was given in the report for 1949. This classified work into the following sections:—

(*a*) Machinery testing;
(*b*) Staff training;
(*c*) Development schemes in uninhabited country;
(*d*) Development schemes in settled areas.

This classification of work and projects is adopted for the present report on activities during 1950, though a note on the economic changes which affect these schemes has been added.

Economic Conditions

The primary factors determining the need for, and success of, schemes which aim to introduce mechanisation into African farming are economic, because machinery will only be used if the return obtained by the farmer through its use is greater than he could obtain by using traditional methods of peasant agriculture. During 1950 there was some rise in the values of the majority of the main farm crops of Uganda although towards the end of the year prices for sweet potatoes and bananas in the main markets of Buganda were rather lower than at the end of 1949, owing mainly to supplies being plentiful. Throughout most of the year there was a considerable shortage of employed agricultural labour and wage rates increased by some Shs. 5 per month. During the last few months of the year prices of agricultural machinery and imported materials rose rapidly, though the abolition of customs duty on power kerosene and the refund of the duty on petrol kept fuel prices down to a level rather lower than they were at the beginning of the year.

Introduction of mechanisation and nearly all other improvements envisaged in agricultural development schemes require investment of large amounts of capital and, while the Development Plan covers the requirements of Government controlled schemes, additional finance is often required by those farmers who are participating in contract tractor cultivation schemes. To this end the opening of the Uganda Credit and Savings Bank which is financed by Government, provides facilities for certain types of farmers to obtain cheap capital and, by the end of the year, a number of Baganda had made arrangements to make use of this Bank to purchase or hire machinery.

In general, therefore, economic conditions during 1950 were no more favourable for development schemes than in 1949, but by the end of the year guarantees of price increases in some agricultural commodities in 1951 combined with relaxation of controls on certain produce made farming prospects for 1951 more favourable and farmers were taking more interest in these schemes.

Machinery Testing and Supply

The supply position for agricultural machinery of all types was much more favourable during 1950 than in previous years. About sixty farm tractors were sold by commercial firms in Kampala in addition to sales of heavy Crawler tractors to sugar estates and other estates requiring machinery for land clearing; most of the farm tractors were sold to Government and

non-African estates. The presence of a nucleus of tractors in the country has caused a considerable improvement in local supplies of spares and has induced local firms to appoint agricultural mechanics to their staff; at the same time manufacturers also are much more interested in farm machinery requirements than was the case a year ago.

The use of machinery in the clearing and preparation of land and the cultivation of numerous crops was studied extensively during 1950 and the information obtained is detailed below:—

Land Clearing

The main methods under trial were:—

(i) *Hand Clearing with Monkey Winches.*—Experience so far indicates that monkey winches are the cheapest method of felling trees in all areas but their use is slow unless large supplies of labour are available. Development schemes in most areas will therefore need to supplement winches by tractor-drawn implements if excessive unproductive supervisory charges in the early stages of such schemes are to be avoided.

(ii) *Machine Clearing.*—On Busoga Farms a D.8 Caterpillar with dozer and rooter is being used followed by D.4 Caterpillars and a Fordson tractor with a winch for piling and pulling, while at Namulonge a T.D.9 International is being used with dozer and rooter. Experience so far indicates that careful attention must be paid to local topography, soil conditions and bush types and that in most cases complete mechanisation of clearing is very expensive.

Cotton planting and weeding are being studied at Namulonge. Existing American-made cotton planters are reasonably satisfactory but steerage hoes tried for weeding have not been satisfactory where land has a considerable slope or where much trash is present in the soil; use of mounted ridgers for weeding has been more promising under these difficult conditions. No trials with cotton harvesting machinery have been made.

Increased use has been made of rotary hoes, tractor mounted rotavators and mounted disc harrows for weeding coffee by non-African estates, while a few African growers have hired rotary hoes. These implements carry out such work at a rather higher cost than hand labour and do it less efficiently and therefore they have so far been used only when hand labour is not available.

On Busoga Farms a heavy subsoiler fitted with a ridging body has been used successfully for ridging for sweet potatoes on land recently cleared from bush. Disc ridgers have been used successfully under similar conditions and have also been used on contract work in Buganda. Mounted double mould board ridgers have been used at Namulonge and on experiment farms; their use facilitates weeding and harvesting, but they cannot be used safely unless the land is free from stumps and roots. A robot transplanter was used on Busoga Farms, but certain adaptations are required, and the makers have arranged for these to be made. Weeding sweet potatoes has been carried out successfully with a mounted ridger on Busoga Farms and at Kagongo. Mechanical harvesting of this crop has been done on Busoga Farms with

the subsoiler and ridging body, but results were not very successful as too many tubers were buried.

Maize planting has been carried out with American planters successfully both on farms and on contract schemes, and millets have been planted successfully by both the drill planter and bean seeder. Spring tine weeders have been used for thinning and weeding *Eleusine*, sorghum, and maize, but their use at Kagongo for weeding cotton was not successful. Lack of uniformity in ripening and excess moisture in the straw prevented successful combine harvesting of both *Eleusine* and sorghum on Busoga Farms, though both crops were readily threshed after drying. In the damper parts of Uganda the use of a binder, or a combine with a pick-up reel, may well prove necessary for harvesting not only these crops but also beans and the drying of grain after combining will almost certainly be essential.

So far poor results have been obtained with both planting and harvesting of beans.

A great deal of information was obtained during 1950 on land preparation. At Namulonge a heavy mouldboard plough was used with good results for initial breaking but elsewhere disc ploughs of both trailer and mounted types have been used. In general, crawler tractors have been most successful on estates but rubber tyred tractors are preferred for contract work entailing much road transport. On the lighter soils of Teso and Lango Districts and the Mwenge County of Toro District one heavy ploughing followed by a disc tilling has been found sufficient to prepare a seed bed but, on the heavier soils of Buganda and South Busoga, two ploughings followed by a disc filler, disc harrow or rotavator have in most cases been found necessary.

Staff Training

The training of tractor operators and mechanics continues to occupy a great deal of the time of all officers concerned with machinery and, while improvement is taking place, the process is slow and expensive; for instance repair costs due to breakages so far are probably at least double the recognised rates in European countries. In general, results with boys coming from secondary schools have been more promising than with lorry drivers or the promoted farm hand.

Development Schemes in Uninhabited Country

(*a*) *Busoga Farms, Bunya.*—During 1950, the first year of operations on the farms, the objectives were to clear and plant two out of six shifts on one 500-acre farm and to clear at least one shift on two additional farms for cropping in 1951. Attainment of these objectives required recruitment and training of staff, erection of buildings, houses and workshops, purchase of machinery and accumulation of sufficient agricultural information to justify expansion of activities in succeeding years. Approximately 200 acres were stumped and cleared and prepared for cultivation, while felling took place on a further 300 acres which was also stumped and partially cleared of the felled trees and scrub in preparation for use in 1951.

The 200 acres prepared for cultivation in 1950 were planted to sweet potatoes, beans, sorghum, *Eleusine* and sunflower. Generally speaking the yields of the crops harvested were disappointing due in the main to the excessively rough soil conditions and to difficulties of working machinery in land recently opened, also owing to the isolated nature of the area, damage by birds to the grain crops was severe.

After making full allowance for the depreciation of capital assets, the farm balance sheet reflected a loss on the year's working. This was not unexpected in view of the high charges for supervision per acre of land cultivated necessitated by the investigational nature of this project in its early stages of development and to the low crop yields referred to above. While it is the intention that the farm should be run on fully economic lines, the development of this policy is restricted by the basic concept of the farm as a food producing scheme. The prices obtainable for the crops grown towards that end are related to purely internal price levels which are largely controlled by Government in the interests of the general economy of the country and there is therefore no possibility of offsetting the high landed costs of imported mechanical equipment by the production of high value export crops which would undoubtedly be undertaken by a mechanised farm run on purely commercial lines. The farm also has to face market competition from the comparatively cheap production of African farmers and while in the future farm costs may be reducible to similar levels there is no possibility of this being attained during the preliminary years of investigation and development.

(*b*) *Bunyoro Agricultural Company*.—This development company is in process of formation for the purpose of developing an area of land to the south of the Masindi-Atura Road in the Bunyoro District. The area is very sparsely inhabited and is infested with tsetse fly, principally *Glossina morsitans* and *Glossina pallidipes*. The total area involved is estimated at 30 square miles, but in the initial and experimental phase of the scheme development will be confined to a portion not exceeding 2,000 acres in extent which will be regarded as a pilot scheme, on the success of which further development will depend.

The Development Company has a preliminary authorised capital of £100,000, the shareholders being the Protectorate Government (£40,000), two commercial firms (£40,000) and the Bunyoro African Local Government (£20,000), the latter's investment being in the form of the undeveloped land leased to the Company for a period of 33 years in the first instance with provision for renewal.

The Company will be responsible for the agricultural development of the land, for the provision of all housing, roads, agricultural machinery and implements and for the provision of the necessary supervisory staff. Government will be reponsible for the provision of basic water supplies and other major social services. In the first instance paid labour will be employed and, as development proceeds, it is anticipated that many of these will settle permanently in the area, but the ultimate intention is to change over progressively to a system of African co-operative operation and management

based on African co-operatives formed from those Africans settled on the land. Reserve funds to be established from a portion of the share profits payable to the African Local Government and the Protectorate Government will be established to provide capital necessary for housing on village lines; capital equipment in the form of farm machinery and implements being retained by the Company for operation by them on behalf of co-operatives. It is intended that payment for cultivation services shall be made by co-operatives in the form of a cess or share of the farm produce produced.

The area is suitable for the cultivation of millets, maize, groundnuts, beans, tobacco and cotton, and it is hoped that, as development proceeds, tsetse will be exterminated and the inclusion of cattle in the farming system may be made possible.

Work on the initial pilot portion of the scheme was commenced towards the end of the year and it is expected this will provide much useful information on the agricultural potentialities of the area before large scale development is planned.

Development Schemes in Settled Areas

This was the first year of running a contract service of any magnitude, although during the previous two years valuable information was obtained from the small trial units. By the end of the year, a total of sixteen tractors and ancillary cultivating equipment were operating as four units distributed in South Kyagwe, Kyadondo and Bulemezi in Buganda, with one unit in Teso district.

In addition one Ferguson tractor and plough carried out some contract work in Toro District towards the end of the year. The total acreage ploughed, including second or cross ploughing, was approximately 1,825 acres while the acreage covered by tillage and planting implements was 502 acres.

The results of one year's work have shown that there is a keen demand for hire of tractors. So far they have been used as a supplement to hand labour and have allowed the farmer to get his work done more quickly and to expand his cultivation to a limited extent. Summarised figures of the year's operations, however, show that the service has been run at a considerable loss but these figures are averages and do not give a reasonable forecast of what may be expected with more experience. For instance, a few of the most efficient drivers with the most efficient tractors and implements have had very much better performance figures than the average and there are good grounds for believing that the average performance in 1951 will be better than in 1950.

SECTION II.—FOOD CROPS

Eastern Province

The comparatively wet December of 1949 and the early arrival of the spring rains in March, 1950, enabled food planting to proceed vigorously and satisfactory acreages of all crops were sown. Unfortunately the abnormally

dry spell in June and early July caused partial crop failures in some areas (notably Usuku county and the lake-shore regions of Teso District) and the exceptionally large harvest anticipated earlier in the seaon did not materialise. Local food shortages occurred in May and June and it became necessary to import small amounts of maize into the worst areas of Teso District, while in parts of Mbale District it was necessary to permit the opening of "husbandmans" granaries at the discretion of sub-county chiefs. However, the shortfalls were, later in the year, offset by good crops of sorghum and increased plantings of cassava and sweet potatoes.

In Busgoa District, the *Eleusine* acreage was larger than that planted for many years. A fairly good harvest was secured, but as a result the people unfortunately followed their normal custom and planted somewhat reduced acreages of root crops. However, in the event, good crops of roots and plantains were obtained and no food shortages occurred.

In Teso District the acreage planted to *Eleusine* showed a recorded decrease of some 50,000 acres against the 1944/49 six-year mean of 267,000 acres. There appears to have been a progressive decline in the recorded acreage during the last three years but this may possibly be due to the more accurate assessment of crop acreages. On the other hand the weeding and harvesting of *Eleusine* makes large demands on the time of cultivators and there are signs that farmers in this district are looking to a more varied diet which includes increased amounts of pulses and other crops.

In Mbale and Teso Districts excellent progress was made in the systematic distribution of mosaic-resistant varieties of cassava. This was largely due to the active co-operation of all concerned and as the benefits arising from these new introductions are now becoming apparent the increase scheme is being welcomed. In Mbale District also, a vigorous campaign for the general earlier spring planting of cassava was instituted during the beginning of the year because parts of this district habitually suffer from food shortages due mainly to the inertia of the people. Excellent results were obtained from this campaign and those areas which are frequently short of food, such as Pallisa, had by the end of the year satisfactory food reserves hitherto unknown for many years.

Northern Province

Except in Karamoja District where, towards the end of the year, maize meal imports were abnormally heavy, there was no major shortage of food and reserves from communal granaries were not called upon as all minor shortages were made good in the local markets either by barter or by cash transactions. The unsatisfactory rains, however, were responsible for low yields of both early and late planted cereals and legumes, but it was fortunate that, to some degree, the low yields were compensated by larger plantings resulting as a natural sequence from the increased cotton acreage and also from propaganda directed towards self-sufficiency of foodstuffs.

The acreage sown to *Eleusine* was slightly higher than that planted in the previous year but there was a marked increase in the acreages under sorghum and mixed beans. The sorghum acreage was 196,182 acres compared with 159,149 acres in 1949, while the mixed bean acreage rose from

50,436 acres in 1949 to 83,436 acres in 1950. Similarly the total plantings of pigeon peas showed an increase of some 13,000 acres over the previous year's figure of 209,482 acres.

Special attention was given to the root crop planting campaign on account of the threatened desert locust invasion and the possible shortage of grain and pulses in the early months of 1951. Much of the cassava was planted from August to October and survived the drought extraordinarily well. The acreage under this crop was increased in all districts and at the end of the year the figure stood at 171,347 acres compared with 128,235 acres in the previous year. Although the acreage under sweet potatoes fell by some 7,500 acres in Lango District, increased plantings took place in other districts, giving an overall rise of about 23,000 acres.

The distribution from increase centres of mosaic-resistant varieties of cassava has proceeded satisfactorily.

Western Province

Throughout the Province food supplies were better than for several years and despite a year of unsatisfactory and erratic rainfall there were only minor shortages in localised areas. Apart from the importation of food for estate labour in Toro District no other importations were necessary and any local shortages were made good from neighbouring areas.

In Kigezi District the acreage under all major food crops was increased, but in other districts the total acreages showed but slight variation from the previous year. In the former district it is becoming increasingly obvious that the soil conservation work, the improvement in soil fertility by composting and resting fallow, and the reduction of the population on the land in East Ndorwa and South Rukiga by the resettlement scheme is having a cumulative beneficial effect on local food production and on the yield of the crops. The practice of planting sweet potatoes in the swamps and along the swamp margins continued. In many areas this has led not only to a good food reserve but also to a secure supply of vines for planting purposes.

The acreage under cassava was increased in all areas and the issue of mosaic-resistant varieties from the various increase centres throughout the Province has proceeded although perhaps not with the same vigour as in those areas of the Eastern Province where the crop generally assumes a position of greater economic importance.

Although priority of work and propaganda continued to be given to increased production of food in all districts, special emphasis was placed on this activity in Toro District in order not only to overcome the partial famines which occur all too frequently in parts of that district, mainly due to the apathy of the people, but also to produce a substantial surplus of food. Apart from cotton it has been difficult to find a high priced crop for this district which will withstand the cost of the long haul of some 200 miles to railhead at Kampala, but the rapidly increasing requirements of food for labour employed on the Kilembe mines and on the developing tea estates presents the opportunity for using surplus food crops as cash crops.

Buganda Province

In Mengo and Mubende Districts the principal food commodities such as plantains, maize, beans, sweet potatoes and cassava were in plentiful supply throughout the year and indeed plantains arrived in Kampala in such quantities during the latter part of the year from South Bugerere that sellers found much difficulty in disposing of the surplus. In the past the care of plantain and banana gardens was looked upon as the responsibility of the women, but with the sociological changes that have taken place during the last two or three decades there has been a progressive decline in the standard of management of these gardens. This has been reflected in lower yields and many plantain gardens are now of a sub-economic standard in relation to the area of land which they occupy. The improvement of these gardens by adopting simple husbandry methods such as mulching and the utilisation of household refuse, compost and, where available, cattle manure, is being continually stressed. Some response to this is becoming evident especially in those areas which derive considerable income from the sale of plantains to urban populations.

In Masaka District the year began with food in adequate supply in most counties and the good rains during May and June helped to consolidate the position. Subsequently, deficiencies in the rainfall in the period June to September occasioned local shortages and it was necessary to import considerable quantities of maize flour into the district for sale to make good the shortages of plantains and root crops that developed in the areas of most deficient rainfall.

Under normal conditions cassava as a food crop is of minor importance to the Baganda and is only grown as a famine reserve for use when other foods are in short supply. This to a large measure accounts for the slow progress which has been made in many areas of the Province in the planting of mosaic-resistant varieties.

While green maize has for some years past been a food of seasonal importance, maize flour is assuming an increasingly important position in the diet of many people. The main maize producing district is Mengo which continued to provide a substantial marketable surplus.

Food Crops—Investigational

The Botanical Section of the Department has continued work in connection with the production of improved varieties and strains of food crops not only by plant breeding and selection methods but also by the introduction of new material from other countries and territories. Improved cultural methods are also continually under review; an example of this is the growing of interplanted maize and groundnuts at a variety of spacings not only from a soil fertility point of view but also to enable the planting of cotton to be telescoped into the period when ripening maize is still standing on the ground.

During recent years one of the most important items of work connected with food crops has been the selection, production and distribution of varieties of cassava which are resistant to mosaic disease. This will un-

doubtedly have far-reaching effects especially on the economy of those areas where the crop is of major importance.

Investigations into Rosette disease of groundnuts continues and the work on the production of a good yielding, early maturing maize and of varieties of sorghum and finger millet suitable for harvesting by mechanical means is progressing.

SECTION III—ECONOMIC CROPS

Cotton

The 1949/50 crop amounted to 339,788 bales. Comparative acreage and production statistics are given in Appendix I (*a*) and the following table gives a comparative picture over the past nine seasons:—

COTTON PRODUCTION, 1941–1950

Season	Estimated acreage	Bales of lint (400 lb.)	Average yield per acre	Average price to grower per 100 lb.
				Shs. cts.
1941–42	1,287,256	238,616	245	7 68
1942–43	874,776	112,548	173	12 56
1943–44	1,233,801	191,452	203	13 18
1944–45	1,072,493	272,567	337	14 83
1945–46	1,145,568	227,544	265	16 40
1946–47	1,253,257	231,946	247	18 45
1947–48	1,036,829	166,275	218	20 42
1948–49	1,555,371	391,238	333	29 61
1949–50	1,628,473	339,788	309	31 75

The f.o.b. Mombasa value of the lint from the 1949–50 crop amounted to £16,637,757 compared with £17,342,765 in the previous season. The crop was sold overseas through the Lint Marketing Board as a bulk sale to the United Kingdom and to the Government of India.

In regard to the 1950–51 crop, this was planted under reasonably favourable conditions though shortage of immigrant labour from the Belgian Congo in the main producing areas in Buganda was a factor adverse to maximum acreage. At the end of the year the estimate of production stood at 300,000 bales.

Cotton Seed Distribution.—The variety B.P. 52 grown in Buganda is the highest quality cotton produced in the Protectorate and the maintenance of the purity of the seed issued for planting is most important on account of the relationship between genetically pure seed and quality and uniformity of lint. For the 1950 planting season an examination was made of seed produced from all ginneries and requisitions for seed for planting were made on ginneries which showed that the purity of the seed was of a satisfactory standard. In addition the Mubende-Toro zone, North and Central Kyagwe and Kyadondo counties of the Mengo-Entebbe zone were supplied with

new B.P. 52 seed from the Bugerere segregated area and the East Kyagwe multiplication area, while the two Teso zones were issued with pure S.47 seed from the Teso segregated areas. B.P. 52 was replaced in the West Nile District by the variety S.47 grown in the previous season in the segregated area of East Madi. In Buganda the measures which have been taken through the seed multiplication, increase and distribution schemes, have lifted the purity index in three seasons from seventy-five to ninety per cent. This has virtually eliminated one source of irregularity in the crop and any irregularity remaining, apart from faulty processing, can be attributed to the vagaries of climate and season. The variety S.47 yields consistently well under a variety of conditions; it is resistant to jassid and somewhat resistant to blackarm, and in Teso a record crop of 37,000 bales is expected from the 1950 plantings which compares with an average crop of 19,000 bales. It is planned to introduce the variety S.47 during the 1951 planting season into the Northern Province zones and into the Mbale District zones.

Cotton Investigational Work.—The principal efforts for the past two years have been concentrated on work connected with the control of blackarm disease and the control of the principal insect pest of cotton, namely the capsid *Lygus vosseleri*. In regard to the former, apart from breeding work for blackarm resistance, progress has been made with the chemical pre-treatment of seed subsequently issued for planting purposes. This work has been done in co-operation with Messrs. Imperial Chemical Industries to whom thanks are due.

In 1950 some 800 tons of S.47 seed were de-linted and dressed with cuprous oxide (Perenox) at the Agu and Bugondo ginneries of Messrs. The Liverpool Uganda Company Limited. The dressed seed was issued for planting in the South Teso zone and in the Teso segregated areas. A survey made in September through the Lango, Teso and Mbale Districts showed that in the zones where the seed had been dressed, the plants had only one half of the amount of blackarm compared with the crop in those areas where untreated seed has been used. This effect was still observable in November and there is no doubt that seed dressing contributed materially to the magnitude of the season's Teso crop.

As regards insecticidal control of *Lygus*, many spraying and dusting trials with BHC and especially with DDT were carried out to confirm and extend the findings of the two previous years' work. At the end of the year picking of the cotton in the trial plots was still being carried out and therefore final conclusions cannot yet be given. However, it was evident that in most cases dusting with five per cent DDT in diatomite raised the yield but it is doubtful whether the increases so far obtained will be economic. Further work, therefore, is being planned to try stronger dusts and other improvements of technique.

The spraying experiments have not so far given the results expected and while it has been confirmed that spraying can almost double the yield in certain circumstances, the work has revealed interactions with blackarm spacing, American bollworm and other factors. It is, accordingly, necessary to continue this work of the Entomological Section in collaboration with the

Botanical Section and Messrs. Imperial Chemical Industries in an endeavour to effect a measure of *Lygus* control which will be not only economic in its application but also suitable for peasant farming conditions.

Coffee

Buganda Province

The sixty per cent. increase in price which was announced in May resulted in a considerable revival of interest in the coffee crop. The demand for young trees from the Buganda Government nurseries became keen and during the year some 390,000 seedlings were sold compared with 230,000 in 1949. New plantings therefore assumed considerable proportions and in addition growers endeavoured to improve the condition of their existing coffee and to resuscitate neglected plots. In this latter work, however, they were handicapped in their efforts by the shortage of immigrant labour and many plantations unfortunately remain infested with couch grass (*Digitaria scalarum*). Nevertheless it is considered that much of the new planting and improvement of established coffee has been done by small growers relying on their own exertions.

Despite the advance that was made in the standard of cultivation it is obvious that there is still room for considerable improvement and that production from the present acreage could be vastly increased by the adoption of better husbandry methods. Towards the end of the year a further campaign was launched to encourage better picking and drying, and although a large number of drying tables were erected, notably in Mawokota, there was little noticeable improvement in methods of picking.

Generally speaking the year was a successful one, following the rather poor one of 1949. The value of the crop to the growers was estimated at £1,819,930 and the following table shows the amount of coffee of all grades which passed through the curing works annually from 1943 to the year under review:—

Buganda Province

Native Coffee Production

(*Tons*)

	1943	1944	1945	1946	1947	1948	1949	1950
Cured Coffee ...	17,717	11,856	16,085	24,449	17,238	31,142	18,351	26,263

Eastern Province

Arabica.—Sales from the 1949–50 crop in Bugishu District were average and amounted to 2,852 tons of parchment, 43 tons of lights and 108 tons of buni. The total value of the crop to producers was £184,859 as compared with £173,799 in 1949. Comparative figures of parchment production together with total crop values to growers for the past nine seasons are as follows:—

BUGISHU ARABICA COFFEE

	Parchment	Estimated Value
	Tons	£
1941–42 ...	3,004	79,256
1942–43 ...	2,264	55,861
1943–44 ...	3,679	105,592
1944–45 ...	2,705	73,740
1945–46 ...	2,817	97,169
1946–47 ...	3,058	107,215
1947–48 ...	2,996	121,692
1948–49 ...	2,857	173,799
1949–50 ...	2,852	184,859

As regards the 1950–51 crop the favourable weather during the first half of 1950 kept the trees in good condition and a heavy crop was set. Owing, however, to neglect of weeding caused by biennial circumcision ceremonies buni formation was high; nevertheless, at the end of the year, a total crop of 3,700 tons of parchment and 300 tons of buni was expected.

The price range paid to growers was considerably simplified in that the price differential between Grade I and Grade II cherry was cancelled. A flat price of 20 cents per pound for good quality cherry and Shs. 1 per pound for good quality parchment was paid. The price for buni was fixed at 30 cents per pound with 50 cents for "fifi" parchment. In addition, in order to encourage co-operative marketing, Co-operative Societies received a premium of one cent per pound for all good quality parchment plus a bonus on quality after grading in Nairobi as follows:—

Grade 3	12 cents per pound.
Grade 4	9 cents per pound.
Grade 5	6 cents per pound.
Grade 6	3 cents per pound.

The high prices paid resulted in a firm demand for seedlings and, in addition to free issues made under the Replacement Scheme, over 1,500,000 seedlings were sold to growers at two cents each.

Robusta.—Slightly more interest was taken in this crop in South Busoga where some 50,000 seedlings were distributed during the year. Approximately 20 tons were sold as compared with 24 tons in 1949. Prices paid were 35½ cents per pound at Iganga and 36 cents at Jinja.

WESTERN PROVINCE

Comparatively small amounts of coffee continue to be produced in Kigezi, Toro and Ankole Districts, but during the year interest in the crop was stimulated somewhat by the increase in price. Bwamba County of Toro District produced 456 tons of clean *Robusta* coffee compared with 275 tons in 1949, while the total production throughout the Province amounted to 204 tons of *Arabica* and 507 tons of *Robusta*.

NORTHERN PROVINCE

Coffee production in this Province is confined to the West Nile District and, although the growing of *Robusta* has been demonstrated at the lower elevations and *Arabica* at the higher, farmers have in the past taken a negligible interest in the crop. The higher prices have, however, encouraged a few growers in the southern highland areas to take a more serious interest

in the case of regeneration of their old plantations and the planting of new plots. The total estimated acreage is less than 50 acres.

Tobacco

Fire-Cured

Following upon the wave of apathy which was evident in Bunyoro towards this crop in 1949, a campaign for an increase both in acreage and in quality was commenced well in advance of the beginning of the 1950 tobacco season. Despite local difficulties coupled with adverse weather conditions during February and March, the campaign met with a measure of success and by the first week of June some 5,532 acres had been planted compared with 3,972 acres in 1949. Growth of the crop was moderately good, although it suffered a set-back in the middle of June due to a hot dry spell, and hail damage was below average. Marketing commenced in October and a total of 1,928,010 pounds were purchased.

In Mubende District the acreage under fire-cured tobacco was deliberately reduced and confined to Buyaga County only since it was felt that the areas where this type of tobacco had formerly been grown in Bugangazzi and Buwekula were more suited to the production of air-cured tobacco. Some 640 acres of "Heavy Western" variety were planted and the crop grew well. The quality of the leaf was satisfactory and a total of 396,919 pounds of cured leaf was marketed.

Air-Cured

As mentioned in the preceding paragraph, this type of tobacco was grown in some of the former fire-cured areas of Mubende District. Unfortunately the crop (Jamaica Wrapper) did not prove satisfactory and in future the areas concerned will revert to the production of fire-cured leaf. A total of 304,928 pounds of air-cured leaf was obtained from the 769 acres planted.

Owing to unfavourable weather conditions and the poor state of the seed beds only 680 acres were planted in West Nile compared with 823 acres in 1949. Hail damage too was more serious than normal which further reduced the gross yield and sales amounted to 186,698 pounds only.

Small experimental plantings of air-cured tobacco were made in the Kigezi resettlement area and 2,245 pounds of cured leaf were produced.

Flue-Cured

Production of this type of tobacco was continued in Acholi and West Nile Districts. A total of 103,000 pounds of cured leaf was obtained from 345 acres planted in Acholi, while in West Nile 234 acres yielded 65,802 pounds of cured leaf.

Nicotine Tobacco

The acreage under this crop declined during the year and only 1,917 acres were planted compared with 2,476 acres in the previous year. Production totalled 1,017,783 pounds of leaf which was purchased by Messrs. Kigezi Industries Limited. The reduction in acreage was due mainly to the lower price paid for this type of leaf compared with other tobaccos and to more lucrative prices for other crops.

Producer prices for all types of tobacco, except flue-cured, were advanced during the year. Those for both fire- and air-cured leaf were increased from 45 cents to 52 cents per pound for Grade I and from 35 cents to 38 cents for Grade II, while the price for nicotine tobacco was advanced from 12 to 14 cents per pound.

Oilseeds

Groundnuts

In Busoga, where the bulk of the crop is grown, the acreage was increased from 41,363 acres in 1949 to 68,750 acres in 1950 and a record crop of 11,111 tons of kernels was marketed; the previous record was obtained in 1948, when 5,900 tons were sold. The fact also that the acreage planted was less than in 1948 points to better methods of husbandry and reflects the good food position in this district which enabled the growers to sell a much greater proportion of their crop. In Mbale District the acreage was increased by some 6,000 acres, a satisfactory crop was obtained and the marketable surplus amounted to 2,000 tons compared with 432 tons in 1949. The total acreage planted in the Eastern Province was 185,128 acres from which a marketable surplus of 15,113 tons was sold.

In the Northern Province efforts were made to revive interest in groundnuts but unfortunately these were nullified by the drought. Eventually, in order to attempt to conserve supplies marketing arrangements were cancelled and permits to purchase were withdrawn. It is estimated that some 68,000 acres were planted against 60,000 in 1949.

The cultivation of groundnuts is increasing in popularity in Ankole District but higher yields per acre could be obtained were a little more care paid to husbandry methods. The seeding rate is frequently too low and in consequence the incidence of rosette disease is higher than it otherwise might be. Sales from the autumn 1949 planted crop amounted to 1,490 tons while the 1950 spring crop yielded a marketable surplus of 480 tons.

Although groundnuts throughout the Protectorate are regarded primarily as a food crop, this aspect is particularly relevent to Buganda where from an area of 60,133 acres planted in 1950 a marketable surplus of only 894 tons was sold.

During July groundnuts were freed from local producer price and distribution control except that throughout the Protectorate prices paid to growers found their own levels which were related to a basic fixed price of Shs. 580 per ton, bagged, free on rail at Uganda stations and ports.

Cotton Seed

Production of cotton seed from the 1949–50 cotton crop amounted to 124,450 tons, which was utilised as follows:—

	Tons
Exported to the United Kingdom ...	48,175
Allocated to local oil mills for crushing ...	52,783
Distributed to growers for planting ...	18,985
Used as fuel at ginneries	3,878
Used for stockfeed	47
Accidentally burnt and shortfall	582
Total ...	124,450

Simsim

Simsim is used mainly as a food and while large marketable surpluses were produced in the past, especially in the Eastern and Northern Provinces, it is now losing popularity owing primarily to its low yielding propensity compared with other oilseeds and to the proportionately greater amount of energy spent in harvesting and drying. It is estimated that only some 350 tons were marketed in Teso District, 21 tons in Busoga District, 24 tons in Acholi District and 159 tons in North Mengo.

Shea Butter Nuts

Prices for this secondary or "pin-money" cash crop were again allowed to find their own level and sales in Teso, Lango and Acholi Districts amounted to some 900 tons or approximately half the quantity marketed during the previous year. Yields were poor, but in addition, with more money in circulation from the sale of cotton, there was little incentive to harvest this indigenous crop.

Castor Oil

No direct encouragement is given to the production of this crop but during the year increased interest was evident in Masaka District, the main producing area in the Protectorate, due to the fact that prices rose from 27 cents per pound in January to Sh. 1 per pound by the end of the year. Some 1,300 tons were marketed in 1950 against 672 in 1949, while the cash value to the grower increased from £16,600 in 1949 to some £96,000 in 1950.

The crop continued to be troublesome in that some shipments of soya beans, which were exported overseas, were found on arrival at their destination to be contaminated with castor beans. In order to protect, as far as possible, other produce from such dangerous contamination it was, during the year, made an offence to be in possession of specified produce containing an admixture of castor seed.

Miscellaneous Oil Seeds

Linseed continued to be a valuable by-product of the flax industry in Kigezi District and during the year some 90 tons were purchased.

At the higher elevations of the Protectorate, where the climatic conditions are unsuitable for groundnuts, the growing of sunflowers has been encouraged, firstly as an oil-producing food crop for local consumption and secondly, as a cash crop after the requirements for food have been fulfilled. The white-seeded variety is proving the most promising and the acreage was substantially increased in Kigezi and in the West Nile Districts where 51 tons and 31 tons respectively were marketed.

Grain Crops

Maize

Although no encouragement was given to the growing of maize in the Eastern Province, the acreage increased from 39,000 to 54,000 acres in Busoga District and a record crop of 102,000 bags was marketed. The recorded acreage in Mbale District showed a one hundred per cent. increase over the

1949 acreage and 15,000 bags were marketed. It was felt that a larger quantity than this would have been offered for sale but it is probable that large amounts were retained and gristed for local consumption by the numerous hand and water mills which exist in parts of that district. It is the policy to discourage the growing of maize in areas such as Northern Busoga, parts of Mbale District and in Teso District where the soil and climatic conditions are such that sub-economic yields are normally obtained.

In Buganda the maize acreage declined from 156,970 acres in 1949 to 93,567 acres in 1950. It is probable that this reduction in acreage was due in a large measure to the fact that no seed maize was imported from Kenya for sale to growers as had hitherto been the practice. As a corollary growers felt that Government was no longer interested in the purchase of the crop and so reduced their plantings accordingly. Now that a good white maize is grown throughout Buganda and as growers have learnt how to keep seed from one season to another, it is considered unnecessary annually to issue supplementary supplies of seed from Kenya and that any improvement which it is desired to make regarding the type of maize to be grown can best be undertaken by our own plant breeding services.

Weather conditions in Buganda early in the year were satisfactory for maize planting, indeed the crop grew well and despite the reduced acreage it was expected that good yields would to a large extent compensate for this. In the event, however, the marketable surplus from the main maize area (Mengo District) amounted to but 223,000 bags, compared with some 450,000 bags in 1949, and of which 107,100 bags were railed to the East African Cereals Pool in Kenya.

In the Western Province, some 13,600 bags were marketed of which Ankole produced nearly 9,000 bags. The total marketable surplus was retained within the Province and gristed for feeding locally-employed labour.

In all maize growing areas the price to the producer remained at Shs. 10 per 200 pounds.

Rice

Rice cultivation has unfortunately declined to negligible proportions in Busoga District and continued on a reduced scale in Mbale District. In Teso District the crop is still moderately popular in Kumi and Bukedea counties where some 5,000 acres were grown. The total acreage planted in the Eastern Province amounted to 15,867 acres which was 10,000 acres less than in the previous year. The reason for this sharp decline is not fully understood especially as paddy prices were good and went as high as 85 cents per pound.

The crop continues to be grown in the Bwamba area of Toro District where 115 tons of paddy and approximately 20 tons of hand-hulled rice were sold from the 1949 sown crop. A very small amount is grown in the Northern Province, notably in the Moroto county of Lango District, but here again an unexplained reduction in planting took place.

During the year the marketing of paddy was decontrolled and producer prices found their own levels but these appeared to be much in excess of the

imported hulled rice price equivalent. Efforts are being made to revive this industry in order to make the Protectorate as self-supporting as possible in the matter of rice supplies.

Wheat

In the Bukwa area of Mbale District a group of farmers have combined to grow this crop and have arranged with a neighbouring farmer in Kenya to carry out their harvesting with a combine harvester. They expect to have a marketable surplus of some 300 bags. In Kigezi District approximately 1,200 bags were marketed and the price paid to the growers varied from 12 to 15 cents per pound.

Wheat variety trials were carried out at Kachwekano in Kigezi District and at Bukwa.

Pulses

Beans

This crop is grown to a greater or lesser degree throughout the Protectorate mainly as a food crop and it is only in Buganda, where it is interplanted in maize and cotton, that growers consistently produce a marketable surplus. During the year a total of 4,058 tons were sold, the bulk of which was retained in the country for consumption by labour employed on estates and in industry. Approximately 250 tons were marketed in the Western Province of which 234 tons were sold in Ankole District and retained in that area for food for labour working on the mines. In 1949 only 53 tons were marketed in this district and the campaign for making the District self-supporting in this commodity met with considerable success.

Soya Beans

This crop is losing popularity which is largely attributed to the lower price and lower returns obtainable per acre in comparison with other crops. The Mengo, Masaka and Ankole Districts continue to be the main producing areas and during the year a total of 2,396 tons was marketed, approximately one-third coming from each district.

Field Peas

A large increase in the sale of peas took place in Ankole District but as the acreage under this crop has not varied appreciably during the past three years, it is suspected that a large proportion of the crop came, illegally, from the neighbouring district of Kigezi where under the provisions of the Native Foodstuffs Ordinance there is a ban on the purchase and export of foodstuffs due to supplies being precarious. The acreage under peas in Ankole District has varied from 5,561 acres in 1948 to 6,763 acres in 1950 yet sales during the same period have risen from 8 tons to 526 tons.

Grams and Miscellaneous Pulses

In the North Mengo area the acreage planted to these crops increased by approximately one hundred per cent. over the previous year's figure to a total of 12,246 acres. In Masaka District, however, the acreage decreased slightly but despite that some 1,580 tons were marketed,

In the more northerly and drier areas of the Eastern Province, the cultivation of pigeon peas, tepary beans and cowpeas is being increased both as a source of food and as a fruitful source of income during the last quarter of the year when the money in the hands of cultivators is not so plentiful. In Teso District, for instance, it is estimated that about 500 tons of cowpeas and 650 tons of pigeon peas were sold at prices ranging between 10 and 15 cents per pound and 18 and 25 cents per pound respectively.

Miscellaneous Crops

Flax

This industry continued to be hampered by *Pasmo* disease and despite seed treatment with Agrosan and growing the crop on land which had not previously grown flax, a high percentage of the straw grown with the autumn rains of 1949 and purchased in February and March, 1950 was diseased. In a further effort to control the disease, no flax was planted in the spring rains of 1950 and only a small crop was planted with the second or autumn rains. Hitherto two crops have been grown each year but from a field sanitation point of view it was considered that to reduce this to one crop per year was worthy of trial. In addition, seed of new varieties of flax were imported from Egypt, Belgium and America; these have been grown in an isolation plot for purposes of observing their behaviour and whether or not any of them show at least some resistance to the disease. Unless some means can be found of controlling *Pasmo* disease and increasing the return per acre to the grower, it is feared that it will be necessary to abandon the industry.

The yields of straw and of seed from the crop purchased in the spring of 1950 amounted to 1,089 pounds and 204 pounds per acre respectively, while during the period January to October 44 tons of line fibre and 33 tons of tow were scutched at the Kisizi factory.

Chillies

This crop is essentially one for the small producer and although many attempts have been made by farmers to cultivate it on a large scale they have failed owing to the fact that the majority of labourers are most reluctant to handle chillies in quantity. The market for Masaka capsicums continued buoyant and growers' interest in the crop was well maintained under the stimulus of rising prices which ranged from 35 cents to 80 cents per pound. A total of 557 tons were produced which represented a gross return to the growers of nearly £50,000.

Wattle Bark

This crop is confined to the Kigezi and Ankole Districts. The great interest shown by Asian and African traders in the purchase of wattle bark for sale to India was intensified during the year. Indiscriminate cutting of bark continued and it became obvious that large and unauthorised quantities were exported during the year. At the beginning of the year, the cutting of wattle bark *per se* was forbidden under the provisions of the Native Authority Ordinance. Wattle trees were, however, permitted to be cut for

domestic, fuel and building purposes and for brick, tile and lime burning and it was only reasonable that bark from these trees could be stripped and sold. This, however, complicated matters in that it then became difficult to control the cutting of trees solely for bark production, particularly in view of the high prices ruling. In order to prevent the wasteful cutting of these exotic trees, which were established in a comparatively treeless area primarily for domestic use, consideration is now being given to controlling the industry under the Native Produce Marketing Ordinance. During the year recorded exports of wattle bark from Kigezi and Ankole Districts amounted to 530 tons.

European Potatoes

Although the acreage planted to these potatoes in the Western Province was increased during the year, the marketable surplus was not so great as that of the previous year. The reason for this decline was twofold: firstly because increasing quantities are being consumed in the areas of production and secondly because the incidence of late blight (*Phytophthora infestans*) was greater during 1950. Varieties of potatoes reputed to be highly resistant to this disease have been imported and subjected to trial but to date the results have been disappointing.

Onions

This continues to be a very useful secondary cash crop in parts of Ankole, Toro and Kigezi Districts and the marketable surplus is much sought after in Kampala and Jinja. The total quantity marketed during the year amounted to approximately 300 tons.

Honey and Beeswax

Some 196 tons of crude honey were exported from Teso District; this was purchased by local traders at 40 cents per pound from African collectors. Beeswax is now marketed without restriction through normal trade channels and 1,136 pounds were purchased during the year at a price of Shs. 2 per pound.

Fruit

An excellent crop of citrus fruits was picked in Busoga and purchased mainly by African traders who export these fruits and also pineapples and mangoes to Kenya. It is estimated that the export of citrus alone amounts to some 1,000 tons per annum.

Loofahs

This crop is not grown commercially to any extent but the plant is grown in a semi-cultivated state in the gardens of many Africans for the making of the loofah "sponge" which is used locally. It is interesting, however, to record that reports received from the Colonial Products Advisory Bureau indicate that United Kingdom importing firms received the most promising specimens from an African firm near Kampala.

Staff

In the report for 1949 it was mentioned, and it is again wished to emphasise, that a very considerable amount of the time of both the head office staff and of the field staff of the Department is taken up with the organisation of the marketing of the various crops produced in the Protectorate and on matters connected with the processing of these crops and their products. The organisation and supervision of the primary marketing of cotton, coffee, maize and tobacco, the ginning of the cotton crop and its sale. the oil milling industry, coffee processing, storage and other allied matters all fall within the province of departmental staff. It is hoped that the creation of the new Department of Commerce will, in time, relieve departmental staff of some of these activities which will enable the Department as a whole to devote more time to the equally important problems of agricultural development.

The staff of the Department was augmented during the year by the appointment of two Agricultural Officers and one Chemist, but these additions were more than offset by the loss of three senior officers due to retirement, and further retirements are expected in the near future. There are still numerous vacancies on the establishment and efforts to recruit the additional staff required continue to be made, but there is an overall shortage of suitable men in training in the United Kingdom and elsewhere in relation to the needs of Colonial territories.

It is desired to record appreciation of the work of the Uganda Loading Committee, and to thank the Director of Supplies, the Deputy Controllers of Agricultural Produce and the numerous unofficial members of the community who have at all times given the Department the benefit of their advice and assistance.

I record also, with appreciation, the hard work and loyal co-operation of all members of the staff of the Department throughout the year.

A. B. KILLICK,
Director of Agriculture.

MAY, 1951.

Appendix I (a)

COTTON PRODUCTION—1949–50 SEASON

Province and Zone	Acreages		Sales in Tons		Yields per Acre: Lbs.	
	Totals	Means*	Totals	Means*	Means*	
Buganda—	1949–50	1943–50	1949–50	1943–50	1949–50	1943–50
Mengo ...	401,038	316,892	68,498	57,221	382	404
Masaka ...	59,218	36,554	11,463	6,321	433	387
Mubende-Toro...	86,643	67,936	19,767	12,260	475	348
Totals ...	546,899	421,382	99,728	75,802	430	379
Eastern—						
Busoga ...	224,838	233,741	37,897	28,628	378	277
North Central ...	168,199	127,752	12,364	11,114	165	194
South Central ...	160,310	113,920	10,906	8,245	152	159
Usuku ...	14,282	17,225	1,348	1,012	211	137
North Teso ...	41,404	43,423	2,191	1,871	119	94
South Teso ...	57,669	54,616	2,808	5,422	109	156
Segregated Areas	28,749	32,182	2,673	2,340	208	160
Totals ...	695,451	622,859	70,187	58,632	192	168
Western—						
Bunyoro ...	22,380	18,817	4,177	2,208	419	266
Northern—						
North Lango ...	173,278	96,304	13,000	11,249	169	205
South Lango ...	55,482	40,955	4,096	2,568	165	142
West Acholi ...	37,268	29,380	5,115	3,335	307	237
East Acholi: Lower ...	15,096	9,961	1,186	925	176	220
East Acholi: Upper ...	22,802	19,051	2,603	1,902	256	227
West Nile-Madi	59,817	32,211	5,477	3,255	204	226
Totals ...	363,743	227,862	31,477	23,234	194	229
Protectorate Totals ...	1,628,473	1,290,920	205,569	159,876	309	260

*Northern Province means are for the period 1946–50.

Appendix I (b)

COTTON PRODUCTION—1950–51 SEASON

Monthly Plantings—Acres

Province and Zone	April	May	June	July	August	September	Totals
Buganda—							
Mengo	...	1,012	50,843	181,887	125,307	26,835	385,884
Masaka ...	...	1,824	10,447	20,340	23,647	5,785	62,043
Mubende-Toro ...	...	836	11,371	32,605	27,777	14,535	87,124
TOTALS ...	...	3,672	72,661	234,832	176,731	47,155	535,051
Eastern—							
Busoga	...	10,065	44,311	109,223	64,632	2,471	230,702
South Central ...	...	2,350	23,559	62,692	46,581	...	135,182
North Central ...	...	4,951	34,980	66,636	56,789	...	163,356
North Teso ...	118	2,747	15,887	14,045	6,973	...	39,770
Usuku	865	4,841	3,948	1,831	221	...	11,706
South Teso ...	107	5,392	17,497	14,900	8,960	...	46,856
Segregated Areas...	...	3,589	8,091	10,856	5,171	...	27,707
TOTALS ...	1,090	33,935	148,273	280,183	189,327	2,471	655,279
Western—							
Bunyoro ...	...	444	9,514	15,619	5,342	421	31,340
Northern—							
North Lango ...	39	1,681	35,456	68,444	41,462	...	147,082
South Lango ...	3	652	7,180	18,967	14,758	...	41,560
West Acholi ...	...	395	3,689	21,637	11,112	...	36,833
Acholi: East Upper ...	...	77	1,932	9,064	7,080	...	18,153
Acholi: East Lower ...	...	166	2,775	6,958	1,975	...	11,874
West Nile-Madi ...	...	...	6,836	30,692	18,048	2,452	58,028
TOTALS ...	42	2,971	57,868	155,762	94,435	2,452	313,530
PROTECTORATE TOTALS ...	1,132	41,022	288,316	686,396	465,835	52,499	1,535,200

COTTON PRODUCTION

Appendix I (c)

1,000's of Bales of 400 lbs.—1906–1950

Season	*Bales*	*Season*	*Bales*
1906	500	1928–29	204,000
1907	2,000	1929–30	125,000
1908	4,000	1930–31	189,000
1909	5,000	1931–32	207,000
1910	12,000	1932–33	295,000
1911	20,000	1933–34	286,000
1912–13... ...	26,000	1934–35	253,000
1913–14... ...	40,000	1935–36	316,000
1914–15... ...	26,000	1936–37	332,000
1915–16... ...	22,000	1937–38	418,000
1916–17... ...	28,000	1938–39	307,000
1917–18... ...	27,000	1939–40	300,000
1918–19... ...	36,000	1940–41	365,000
1919–20... ...	47,000	1941–42	238,000
1920–21... ...	81,000	1942–43	112,000
1921–22... ...	48,000	1943–44	191,000
1922–23... ...	88,000	1944–45	272,000
1923–24... ...	128,000	1945–46	227,000
1924–25... ...	196,000	1946–47	231,000
1925–26... ...	180,000	1947–48	166,000
1926–27... ...	131,000	1948–49	391,000
1927–28... ...	138,000	1949–50	339,000

ESTIMATED ACREAGES UNDER CROPS—1949 AND 1950

Native Cultivation

Crops	Buganda Province		Eastern Province		Northern Province		Western Province		Totals	
	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950
Beans, Mixed ...	142,731	109,232	141,282	168,762	50,650	83,436	99,164	97,732	433,827	459,162
Beans, Soya ...	16,108	12,886	...	...	...	...	6,335	7,896	22,443	20,782
Cassava ...	95,340	94,281	165,700	147,034	128,235	171,347	93,697	85,215	482,972	497,877
Chillies ...	2,372	2,316	...	...	...	...	34	31	2,406	2,347
Coffee *Arabica* ...	1,700	2,300	8,500	11,000	...	36	4,711	4,129	14,911	17,465
Coffee *Robusta* ...	147,096	156,670	1,050	1,050	...	...	3,869	4,961	152,015	162,681
Cotton	527,897	508,134	695,451*	621,194*	363,743†	303,038†	41,427	58,336	1,628,518	1,490,702
Flax	...	...	...	...	...	...	1,602	400	1,602	400
Grams ...	9,109	...	...	...	...	...	...	...	9,109	...
Groundnuts ...	72,609	60,133	153,182	185,128	60,838	67,989	31,374	31,645	318,003	344,895
Maize ...	156,970	93,567	74,712	135,938	33,925	34,675	49,036	52,399	314,643	316,579
Millet, Sorghum ...	10,055	17,199	148,794	137,238	159,162	196,182	140,095	164,844	458,106	515,463
Millet, Finger ...	16,257	17,767	699,091	654,340	342,384	343,038	128,537	121,195	1,186,269	1,136,340
Millet, Bulrush ...	...	...	6,300	...	...	928	...	...	6,300	928
Onions	121	...	...	...	...	...	2,161	1,619	2,282	1,619
Peas, Pigeon ...	...	...	400	...	209,482	222,262	868	747	210,750	223,009
Peas, Field	...	...	50	...	...	...	31,830	38,287	31,880	38,287
Plantains	479,774	487,149	271,900	281,500	1,655	758	91,345	101,948	884,674	871,355
Potatoes, Sweet ...	122,766	102,470	157,999	152,675	83,142	110,104	142,063	133,676	505,970	498,925
Potatoes, English ...	577	696	705	3,966	...	...	6,047	7,873	7,329	12,535
Rice	...	...	25,812	15,867	3,719	2,528	1,264	2,906	30,795	21,301
Simsim	6,492	5,322	29,932	30,110	204,893	214,769	6,796	6,126	248,113	256,327
Sunflower	...	...	...	...	...	130	...	414	...	544
Tobacco, Fire-cured	1,269	640	...	...	...	...	4,076	5,532	5,345	6,172
Tobacco, Flue-cured ...	...	...	...	...	437	579	...	...	437	579
Tobacco, Air-cured ...	...	769	...	...	858	770	...	146	858	1,685
Tobacco, Nicotine ...	...	...	...	...	...	...	2,957	2,338	2,957	2,338
Wheat	...	...	1,509	455	...	...	920	595	2,429	1,050
TOTALS ...	1,809,243	1,671,531	2,582,369	2,546,257	1,643,123	1,752,569	890,208	930,990	6,924,943	6,901,347

* Excluding Kuman County. † Including Kuman County.

QUANTITIES MARKETED AND ESTIMATED VALUES

Native Production

Crop	Buganda Province		Eastern Province		Northern Province		Western Province		Protectorate Totals	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Tons	£	*Tons*	£	*Tons*	£	*Tons*	£	*Tons*	£
Beans, Mixed ...	4,060	36,485	...	...	4	52	250	2,262	4,314	38,799
Beans, Soya ...	1,620	20,239	...	...	...	...	546	6,118	2,166	26,357
Castor Seed	1,182	90,258	...	...	...	...	187	41,614	1,369	131,872
Chillies	564	50,537	...	...	...	...	3	168	567	50,705
Coffee *Arabica** ...	377	15,351	2,852†	184,859	...	...	203	14,501	3,432	214,711
Coffee *Robusta** ...	52,148	1,804,579	20	631	...	...	526	15,163	52,694	1,820,373
Cotton	96,551	3,461,553	74,184	6,601,842	29,364	1,003,755	7,488	266,650	207,587	7,333,800
Flax Straw	...	...	...	...	...	...	475	3,446	475	3,446
Flax Seed	...	...	...	...	...	...	91	522	91	522
Grams	1,584	44,335	1,270	25,827	...	...	...	...	2,854	70,162
Groundnuts	894	20,035	15,113	363,483	...	...	2,064	42,759	18,071	426,277
Honey	...	...	196	8,780	...	...	...	...	196	8,780
Maize	21,709	119,944	10,675	59,785	...	...	766	4,399	33,150	184,128
Millet, Sorghum ...	45	1,008	...	...	...	...	...	...	45	1,008
Millet, Finger ...	2	45	...	...	...	...	...	...	2	45
Millet, Bulrush ...	...	...	...	...	...	...	...	...	...	...
Onions	...	...	...	...	...	...	294	3,441	294	3,441
Peas, Pigeon ...	...	...	...	...	...	...	...	...	...	...
Peas, Field	...	...	...	...	...	...	536	14,091	536	14,091
Potatoes, English ...	...	...	...	...	...	...	269	1,692	269	1,692
Rice	...	...	142	3,747	...	...	135	1,825	277	5,572
Simsim	232	5,209	370	9,095	24	529	24	515	650	15,348
Shea Butter Nuts ...	...	...	800	10,544	94	1,662	...	...	894	12,206
Sunflower	...	...	...	...	30	548	51	696	81	1,244
Tobacco, Fire-cured‡	179	10,111	...	...	...	...	860	45,056	1,039	55,167
Tobacco, Flue-cured§...	...	...	...	...	577	3,512	...	...	577	3,512
Tobacco, Air-cured ...	136	7,102	...	...	89	4,679	...	...	225	11,781
Tobacco, Nicotine ...	...	...	...	...	...	...	542	8,672	542	8,672
Wheat	...	...	...	...	...	...	119	1,831	119	1,831
Wattle	...	...	...	...	...	...	530	5,300	530	5,300
TOTALS ...	181,283	5,686,791	105,622	3,268,593	30,182	1,014,737	15,959	480,721	333,046	10,450,842

NOTE.—All values are based upon prices paid to the producers.

* Dried Cherry (Kiboko). † Parchment Coffee. ‡ Cured leaf. § Green leaf.

OVERSEAS EXPORTS OF AGRICULTURAL PRODUCTS—1950

Article	Unit	Quantities			Values		
		1948	1949	1950	1948	1949	1950
					£	£	£
Oilseeds and Products—							
Cotton Seed	*Tons*	619	58,868	49,199	8,930	1,163,382	893,251
Castor Seed	,,	176	658	1,858	5,510	21,764	88,009
Groundnuts	,,	3,209	223	588	120,149	10,742	26,933
Linseed	,,	65	104	109	3,370	5,504	6,300
Cotton Seed Cake	,,	6,802	9,313	13,526	123,124	170,860	233,493
Groundnut Cake and Sesame Cake	,,	299	...	163	5,193	...	3,245
Castor Seed Oil	,,	13	2	1	1,546	200	215
Edible Oils and Fats	,,	...	...	309	...	...	35,455
Other Oilseed Cakes, Meals and Vegetable Oil Residues	,,	...	...	1,958	...	...	35,326
Fibres—							
Cotton	,,	31,117	69,688	62,182	7,457,617	17,342,765	16,697,697
Sisal	,,	1,183	878	1,023	91,217	68,124	107,124
Flax	,,	67	75	86	10,405	8,184	9,990
Beverage Crops and Tobacco—							
Coffee, Raw Hulled	,,	37,804	23,898	31,868	3,246,664	2,890,901	8,331,912
Tea	,,	1,036	1,025	946	229,308	223,087	244,488
Cigarettes	*Lbs.*	1,752,870	623,543	589,185	842,771	75,550	59,639
Tobacco—unmanufactured	*Tons*	...	...	57	...	...	10,549
Spices and Drugs—							
Chillies	,,	1,561	519	872	75,282	44,526	134,579
Cinchona Bark	,,	44	20	22	9,159	3,150	3,376
Papain	,,	33	50	24	54,921	51,711	38,688
Sugar and Products—							
Sugar	,,	31,104	2,309	2,840	757,989	52,914	78,574
Jaggery	,,	139	...	...	5,650	...	...
Ethyl Alcohol	*Proof Gals.*	13,606	53	548	3,229	12	149
Beans and Pulses—							
Beans and Peas	*Tons*	653	1,527	1,326	16,734	41,775	33,391
Pulses	,,	6,622	2,680	5,329	228,967	91,542	168,029
Dhall	,,	44	73	30	2,741	4,123	1,492
Soya Beans	,,	2,223	3,611	2,668	65,907	114,883	89,905
Miscellaneous—							
Insecticides	,,	23	34	27	16,679	30,192	20,732
Millet	,,	462	120	199	7,455	1,950	5,283
Rubber	,,	18	44	99	18,356	4,867	20,971
Wattle Bark	,,	...	...	1,323	...	...	29,591
	TOTAL £				13,408,873	22,422,708	27,408,386

NOTE.—Exports to Kenya and Tanganyika are not included.

Appendix IV (b)

EXPORTS OF PRINCIPAL AGRICULTURAL PRODUCTS, 1950

All Destinations

	Unit	Quantity
Oilseeds and Products:		
Cotton seed ...	*Tons*	49,199
Cotton seed cake ...	,,	21,203
Cotton seed oil ...	,,	4,889
Groundnuts ...	,,	1,266
Groundnut cake ...	,,	4,144
Groundnut oil ...	,,	2,462
Castor seed ...	,,	1,858
TOTAL ...	,,	85,021
Fibres:		
Cotton	,,	62,182
Sisal	,,	1,023
Flax	,,	86
TOTAL ...	,,	63,291
Beverage Crops:		
Coffee	,,	31,868
Tea	,,	872
TOTAL ...	,,	32,740
Spices and Drugs:		
Chillies	,,	872
Cinchona bark ...	,,	22
Papain	,,	24
TOTAL ...	,,	918
Beans and Pulses:		
Beans and Peas ...	,,	5,326
Pulses	,,	5,395
Dhall	,,	88
Soya beans ...	,,	2,668
TOTAL ...	,,	13,477
Miscellaneous:		
Sugar	,,	28,422
Rubber	,,	99
Millets	,,	478
Wattle bark ...	,,	1,323
Maize	,,	9,740
TOTAL ...	,,	40,062

CROP PRODUCTION—UGANDA

Appendix V

Non-Native Production—1950

Crop	Estimated Acreage		Estimated Production			
			Amount		Approximate value	
	1949	1950	1949	1950	1949	1950
	Acres	*Acres*	*Tons*	*Tons*	£	£
Coffee	18,763	21,067	2,581	*3,060	227,247	616,363
Rubber ...	7,000	7,000	44	99	4,867	20,971
Sugar	26,700	26,662	46,108	54,623	1,021,695	1,720,624
Sisal	8,100	9,800	964	1,023	770,120	107,124
Tea	6,157	6,406	1,500	1,849	344,400	414,258
Pyrethrum ...	...	...	...	27	...	20,732
TOTALS ...	66,720	70,935	52,146	60,681	2,368,329	2,900,072

* 1949–50 Season

Subject	Ordinance No.	Legal Notice No.	Short Title	Objects
Coffee	...	61	Bugishu Coffee Scheme Ordinance, 1950	Appointment of two African Members to the Bugishu Coffee Scheme Board.
Cotton	...	16	Cotton Ordinance—Ginning and Baling Rules	Authorisation of Senior Agricultural Officers and Ginning Inspectors to prohibit operation of ginneries as may be required under the Rules.
	...	7	Cotton Zone Ordinance—Maximum prices for ginning and baling cotton	Fixation of prices payable to ginners at 19 cents per pound of lint.
	...	47	Defence (Controlled Produce) Regulations. BR Cotton Seed Order.	Control of the disposal of BR cotton seed.
	...	19	Defence (Controlled Produce) Regulations. AR Cotton Seed Order.	Control of the disposal of AR cotton seed and fixing price and transport allowances payable to ginners.
Excise Duties	25	...	Amendment of Excise Duties Ordinance	Deletion of tea from the schedule of excisable articles.
Groundnuts and Simsim...	...	149	Controlled Produce (Restriction of Export and Marketing) Order.	Restriction on exports of groundnut and simsim oil and cake from Uganda to specified bodies in East Africa and fixing prices for cake.
	...	15	Controlled Produce (Restriction of Export and Prices) Order.	Restriction on exports of groundnuts and simsim surplus to local requirements to specified agents and fixing prices at which such agents will buy.
Loans	20	...	Uganda Credit and Savings Bank Ordinance, 1950.	Provides for the establishment of a Bank for the purpose of making loans to Africans and Co-operative Societies and included in the purposes for which loans may be made is: "the development, purchase, maintenance and improvement of lands".
Native Produce Marketing	...	116	Native Produce Marketing Ordinance—Order.	Abolition of Kigezi as a declared area for beeswax.
	...	216	Native Produce Marketing Ordinance—Order.	Revocation of previous Order limiting the number of buying licences for beeswax.
	...	213–214	Native Produce Marketing Ordinance—Order.	Extension of declared area for tobacco in Mubende District and establishment of additional markets.
Plant Protection ...	...	39	Plant Protection Ordinance—Order	Addition of "sunflower" to the schedule of restricted imports of plant seeds.
Soil Conservation ...	...	46	Native Authority (Amendment) Rules.	Addition of "The Conservation and Protection of the Soil" as an additional purpose to the Rules.
Tea	7	...	Tea Ordinance, 1950	To provide for the establishment of a Tea Board and the imposition of manufactured tea and acreage cesses in the interests of the tea industry and the control of planting and export of tea.
	...	66	Tea Ordinance—Rules.	To specify the rates of cess and method of payment and the conditions of issue of tea export permits as provided for under the Ordinance.
	...	67	Tea Ordinance—Notice	

NOTE.—In addition to the above Protectorate Government legislation, several African Local Government District Councils have made bye-laws providing for improved standards of crop cultivation and soil conservation.

DEPARTMENT OF AGRICULTURE, UGANDA

STAFF POSTINGS AS AT 31st DECEMBER, 1950

A. Administrative

Title	Name	Station	Remarks
Director of Agriculture	A. B. KILLICK ...	Entebbe ...	
Deputy Director of Agriculture ...	T. Y. WATSON ...	Entebbe ...	Proceeded on vacation leave 1–8–50.
Assistant Director of Agriculture ...	W. J. MILL IRVING ...	Entebbe ...	Acting Deputy Director of Agriculture 1–8–50—31–12–50. Acting Director of Agriculture 19–9–50—23–10–50, 9–12–50—19–12–50.
Assistant Director of Agriculture (S.D.)	R. K. KERKHAM ...	Kawanda	
Office Superintendent	E. B. BUCKINGHAM ...	Entebbe	
Stenographer-Secretaries	MRS. J. BECKETT ...	Kawanda	
	MISS H. C. M. MCKINSTRY	Entebbe	

B. General Division

Senior Agricultural Officers and Agricultural Officers	R. P. DAVIDSON ...	Kampala ...	Provincial Agricultural Officer, Buganda.
	M. G. DE COURCY-IRELAND	Masindi ...	Provincial Agricultural Officer, Western Province. Proceeded on vacation leave prior to retirement 8–6–50.
	T. MCEWEN ...	Masaka	
	H. L. G. MILNE ...	Arua, Masindi	Agricultural Officer, Arua 1–1–50—7–6–50. Provincial Agricultural Officer, Western Province 8–6–50—31–12–50.
	D. F. STEWART ...	Gulu ...	Provincial Agricultural Officer, Northern Province.
	E. WILLIAMS ...	Jinja ...	Officer in Charge, Serere 1–1–50—15–11–50. Provincial Agricultural Officer, Eastern Province 16–11–50—31–12–50.
	D. R. N. BROWN ...	Jinja ...	Provincial Agricultural Officer, Eastern Province 1–1–50—29–11–50. Proceeded on vacation leave 30–11–50.
	J. W. PURSEGLOVE ...	Kabale	
	J. M. WATSON ...	Moroto ...	Agricultural Officer, Karamoja 1–1–50—15–11–50.
		Serere ...	Officer in Charge, Serere 16–11–50—31–12–50.
	G. D. BADGER	Entebbe	
	S. MCCOMBE ...	Arua	
	R. K. TREMLETT ...	Mbale	
	A. E. B. WILLIAMS ...	Fort Portal	
	E. S. T. MARSHALL ...	Bukalasa ...	
	W. GALLEY ...	Lira	
	G. WRIGLEY ...	Kampala ...	Proceeded on vacation leave 13–8–50.
	P. S. COOPER ...	Hoima	
	D. C. TODD ...	Busoga Farms	On leave 22–7–50—16–12–50.
	D. D. CAMPBELL ...	Soroti	
	D. J. PARSONS ...	Jinja	

Staff Postings as at 31st Decemcer, 1950—*continued*

A. General Division—*continued*

Title	Name	Station	Remarks
Senior Agricultural Officers and Agricultural Officers—continued ...	W. H. EDWARDS ...	Mubende ...	1–1–50—14–8–50.
		Kampala ...	15–8–50—31–12–50.
	R. G. HAMPSON ...	Mbarara ...	
	J. R. LOW ...	Lira ...	First appointment 6–9–50.
	E. W. KING ...	Kawanda ...	First appointment 23–9–50.
Senior European Agricultural Assistants and European Agricultural Assistants	J. F. LOW ...	Serere	
	E. DE C. CHISHOLM ...	Kawanda.	
	T. BOOTHROYD ...	Kampala	
	G. OLIVER ...	Lira	
	L. B. ELLIS ...	Kawanda	
	T. G. DUNCAN ...	Masaka	
	L. GREEN ...	Kawanda ...	1–1–50—31–5–50.
		Busoga Farms	1–6–50—16–12–50.
	A. G. K. WILL ...	Mbale	
	A. F. BROWN ...	Serere ...	
	J. G. WILSON ...	Serere	
	J. P. M. BATTEN ...	Serere ...	
Flax Officer	G. A. FENNELL ...	Kabale	
Ginning Inspector	F. H. KNIGHT ...	Kampala	
	C. Laboratories Division		
Senior Entomologists and Entomologists...	W. V. HARRIS ...	—	Seconded to Termite Research Organisation.
	A. P. G. MICHELMORE ...	Kawanda	
	P. R. STEPHENSON ...	—	Seconded to E.A. Locust Survey Organisation.
Senior Chemist and Chemists	DR. G. AP GRIFFITH ...	Kawanda ...	1–1–50—31–5–50. Proceeded on vaction leave pending retirement 1–6–50.
	DR. E. M. CHENERY ...	Kawanda ...	Appointed 18–11–50 on transfer from Trinidad.
	W. R. MILLS ...	Kawanda	
Senior Botanist and Botanists ...	J. D. JAMESON ...	Kawanda	
	D. G. THOMAS ...	Serere	
	D. L. DOWNIE ...	Kawanda	
Curator, Botanic Gardens	MRS. A. HAYES ...	Entebbe	

D. Assistant Agricultural Officers

Name	*District or Station*
Y. M. Kaidzi	Mengo
A. N. W. Kamese	Bunyoro
H. D. Mubiru	Kawanda
E. J. Kalanzi	Kigezi
E. Biruma	Busoga
Z. Katerega	Mengo
E. W. K. Wamala	Soroti
E. B. Sarulo	Mbale
Y. K. Musisi	Kawanda
Z. H. Kwebiha	Toro
A. A. Kalanzi	Mengo
S. M. B. Mutagwanya ...	Mengo
M. Makumbi	Busoga
A. Mulera	Bukalasa
Y. K. Musitwa	Mengo
J. O. B. Baguma	Toro
B. Kagolo	Teso
B. Z. K. Kakoko	Kawanda
P. Sempa	Serere
Y. S. Walukamba	Mbale
Z. K. Banagaija	Toro
A. Kamya	Serere
G. L. Kigundu	Bukalasa
P. M. Sali	Ankole
F. H. O. Mugambwa ...	Masaka
H. R. Berunga	Mubende
Y. B. Kidza	Mubende
J. K. Maviri	Mengo
Y. Mugenyi	Mengo
T. K. Otim	Gulu
J. M. Sekimpi	Mengo
Y. Yigga	Mengo
O. L. Lalobo	Lira
Y. E. Onaba	Teso
D. Kyagaba	Masaka
S. M. N. Kijambu ...	Serere
J. M. Luzinda	Mengo
E. Rwaikaikara	Bunyoro
P. S. Bulera	Mengo
J. G. Wanyoto	Mbale
H. Semambo	Serere
Z. Sekidde	Masaka
G. F. Sagala	Bukalasa
I. Bulikiro...	Busoga
R. Kachope	Arua
Z. M. Wanyama	Kigezi
Y. Kimoimo	Kawanda
A. G. Kibulo	Mbale
J. A. Wandera	Entebbe
S. L. Takirambude ...	Kitgum
S. B. Kikule	Busoga
H. Muloki	Mbale
S. Mukasa	Kawanda
W. Kaboha	Toro
D. Kawalya	Gulu
J. S. Musisi	Busoga